CARACTERIZACIÓN BIOLÓGICA DE LA LEUCEMIA MIELOIDE AGUDA CON TRANSLOCACIÓN t(8;16)(p11;p13) Y REORDENAMIENTO MYST3-CREBBP

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VIII. BIBLIOGRAFÍA
Aguiar, RC; Chase, A; Coulthard, S; Macdonald, DH; Carapeti, M; Reiter, A; Sohal, J; Lennard, A; Goldman, JM, and Cross, NC. (1997). Abnormalities of chromosome band 8p11 in leukemia: two clinical syndromes can be distinguished on the basis of MOZ involvement. Blood (90) 3130-3135.

Alcalay, M; Tiacci, E; Bergomas, R; Bigerna, B; Venturini, E; Minardi, SP; Meani, N; Diverio, D; Bernard, L; Tizzoni, L; Volorio, S; Luzi, L; Colombo, E; Lo Coco, F; Mecucci, C; Falini, B, and Pelicci, PG. (2005). Acute myeloid leukemia bearing cytoplasmic nucleophosmin (NPMc+ AML) shows a distinct gene expression profile characterized by up-regulation of genes involved in stem-cell maintenance. Blood (106) 899-902.


Andersen, MK; Christiansen, DH; Kirchhoff, M, and Pedersen-Bjergaard, J. (2001). Duplication or amplification of chromosome band 11q23, including the unrearranged MLL gene, is a recurrent abnormality in therapy-related MDS and AML, and is closely related to mutation of the TP53 gene and to previous therapy with alkylating agents. Genes Chromosomes. Cancer (31) 33-41.

Aoudjhane, M; Labopin, M; Gorin, NC; Shimoni, A; Ruutu, T; Kolb, HJ; Frassoni, F; Boiron, JM; Yin, JL; Finke, J; Shouten, H; Blaise, D; Falda, M; Fauser, AA; Esteve, J; Polge, E; Slavin, S; Niederwieser, D; Nagler, A, and Rocha, V. (2005). Comparative outcome of reduced intensity and myeloablative conditioning regimen in HLA identical sibling allogeneic haematopoietic stem cell transplantation for patients older than 50 years of age with acute myeloblastic leukaemia: a retrospective survey from the Acute Leukemia Working Party (ALWP) of the European group for Blood and Marrow Transplantation (EBMT). Leukemia (19) 2304-2312.


Armstrong, SA; Kung, AL; Mabon, ME; Silverman, LB; Stam, RW; den Boer, ML; Pieters, R; Kersey, JH; Sallan, SE; Fletcher, JA; Golub, TR; Griffin, JD, and Korsmeyer, SJ. (2003b). Inhibition of FLT3 in MLL. Validation of a
therapeutic target identified by gene expression based classification. 
*Cancer Cell* (3) 173-183.

Armstrong, SA; Staunton, JE; Silverman, LB; Pieters, R; den Boer, ML; Minden, MD; Sallan, SE; Lander, ES; Golub, TR, and Korsmeyer, SJ. (2002). MLL translocations specify a distinct gene expression profile that distinguishes a unique leukemia. *Nat. Genet.* (30) 41-47.


Barjesteh van Waalwijk van Doorn-Khosrovani; Erpelinck, C; van Putten, WL; Valk, PJ; van der Poel-van de Luytgaarde; Hack, R; Slater, R; Smit, EM; Beverloo, HB; Verhoef, G; Verdonck, LF; Ossenkoppele, GJ; Sonneveld, P; de Greef, GE; Lowenberg, B, and Delwel, R. (2003b). High EVI1 expression predicts poor survival in acute myeloid leukemia: a study of 319 de novo AML patients. *Blood* (101) 837-845.


Benekli, M; Xia, Z; Donohue, KA; Ford, LA; Pixley, LA; Baer, MR; Baumann, H, and Wetzler, M. (2002). Constitutive activity of signal transducer and activator of transcription 3 protein in acute myeloid leukemia blasts is associated with short disease-free survival. *Blood* (99) 252-257.
Bibliografía


Bernasconi, P; Orlandi, E; Cavigliano, P; Calatroni, S; Boni, M; Astori, C; Pagnucco, G; Giglio, S; Caressana, M; Lazzarino, M, and Bernasconi, C. (2000). Translocation (8;16) in a patient with acute myelomonocytic leukemia, occurring after treatment with fludarabine for a low-grade non-Hodgkin's lymphoma. Haematologica (85) 1087-1091.


Bloomfield, CD; Lawrence, D; Byrd, JC; Carroll, A; Pettenati, MJ; Tantravahi, R; Patil, SR; Davey, FR; Berg, DT; Schiffer, CA; Arthur, DC, and Mayer, RJ. (1998). Frequency of prolonged remission duration after high-dose cytarabine intensification in acute myeloid leukemia varies by cytogenetic subtype. Cancer Res. (58) 4173-4179.


Boissel, N; Leroy, H; Brethon, B; Philippe, N; de Botton, S; Auvrignon, A; Raffoux, E; Leblanc, T; Thomas, X; Hermine, O; Quesnel, B; Baruchel, A; Leverger, G; Dombret, H, and Preudhomme, C. (2006). Incidence and prognostic impact of c-Kit, FLT3, and Ras gene mutations in core binding factor acute myeloid leukemia (CBF-AML). Leukemia (20) 965-970.
Boisvert, FM; Kruhlak, MJ; Box, AK; Hendzel, MJ, and Bazett-Jones, DP. (2001). The transcription coactivator CBP is a dynamic component of the promyelocytic leukemia nuclear body. *J. Cell Biol.* (152) 1099-1106.


Borrow, J; Stanton, VP, Jr.; Andresen, JM; Becher, R; Behm, FG; Chaganti, RS; Civin, CI; Disteche, C; Dube, I; Frisch, AM; Horsman, D; Mitelman, F; Volinia, S; Watmore, AE, and Housman, DE. (1996). The translocation t(8;16)(p11;p13) of acute myeloid leukaemia fuses a putative acetyltransferase to the CREB-binding protein. *Nat. Genet.* (14) 33-41.

Bowen, DT; Frew, ME; Hills, R; Gale, RE; Wheatley, K; Groves, MJ; Langabeer, SE; Kottaridis, PD; Moorman, AV; Burnett, AK, and Linch, DC. (2005). RAS mutation in acute myeloid leukemia is associated with distinct cytogenetic subgroups but does not influence outcome in patients younger than 60 years. *Blood* (106) 2113-2119.

Brunet, S; Esteve, J; Berlanga, J; Ribera, JM; Bueno, J; Marti, JM; Bargay, J; Guardia, R; Julia, A; Granena, A; Montserrat, E, and Sierra, J. (2004). Treatment of primary acute myeloid leukemia: results of a prospective multicenter trial including high-dose cytarabine or stem cell transplantation as post-remission strategy. *Haematologica* (89) 940-949.

bu-Duhier, FM; Goodeve, AC; Wilson, GA; Gari, MA; Peake, IR; Rees, DC; Vandenberghe, EA; Winship, PR, and Reilly, JT. (2000). FLT3 internal tandem duplication mutations in adult acute myeloid leukaemia define a high-risk group. *Br. J. Haematol.* (111) 190-195.


Byrd, JC; Dodge, RK; Carroll, A; Baer, MR; Edwards, C; Stamberg, J; Qumsiyeh, M; Moore, JO; Mayer, RJ; Davey, F; Schiffer, CA, and Bloomfield, CD. (1999). Patients with t(8;21)(q22;q22) and acute myeloid leukemia
have superior failure-free and overall survival when repetitive cycles of high-dose cytarabine are administered. *J. Clin. Oncol.* (17) 3767-3775.

Byrd, JC; Mrozek, K; Dodge, RK; Carroll, AJ; Edwards, CG; Arthur, DC; Pettenati, MJ; Patil, SR; Rao, KW; Watson, MS; Koduru, PR; Moore, JO; Stone, RM; Mayer, RJ; Feldman, EJ; Davey, FR; Schiffer, CA; Larson, RA, and Bloomfield, CD. (2002). Pretreatment cytogenetic abnormalities are predictive of induction success, cumulative incidence of relapse, and overall survival in adult patients with de novo acute myeloid leukemia: results from Cancer and Leukemia Group B (CALGB 8461). *Blood* (100) 4325-4336.

Byrd, JC; Ruppert, AS; Mrozek, K; Carroll, AJ; Edwards, CG; Arthur, DC; Pettenati, MJ; Stamberg, J; Koduru, PR; Moore, JO; Mayer, RJ; Davey, FR; Larson, RA, and Bloomfield, CD. (2004). Repetitive cycles of high-dose cytarabine benefit patients with acute myeloid leukemia and inv(16)(p13q22) or t(16;16)(p13;q22): results from CALGB 8461. *J. Clin. Oncol.* (22) 1087-1094.

Callens, C; Chevret, S; Cayuela, JM; Cassinat, B; Raffoux, E; de Botton, S; Thomas, X; Guerci, A; Fegueux, N; Pigneux, A; Stoppa, AM; Lamy, T; Rigal-Huguet, F; Vekhoff, A; Meyer-Monard, S; Ferrand, A; Sanz, M; Chomienne, C; Fenaux, P, and Dombret, H. (2005). Prognostic implication of FLT3 and Ras gene mutations in patients with acute promyelocytic leukemia (APL): a retrospective study from the European APL group. *Leukemia* (19) 1153-1160.


Care, RS; Valk, PJ; Goodeve, AC; Abu-Duhier, FM; Geertsma-Kleinekoort, WM; Wilson, GA; Gari, MA; Peake, IR; Lowenberg, B, and Reilly, JT. (2003). Incidence and prognosis of c-KIT and FLT3 mutations in core binding factor (CBF) acute myeloid leukaemias. *Br. J. Haematol.* (121) 775-777.

Cassileth, PA; Harrington, DP; Appelbaum, FR; Lazarus, HM; Rowe, JM; Paietta, E; Willman, C; Hurd, DD; Bennett, JM; Blume, KG; Head, DR, and Wiernik, PH. (1998). Chemotherapy compared with autologous or allogeneic bone marrow transplantation in the management of acute myeloid leukemia in first remission. *N. Engl. J. Med.* (339) 1649-1656.

Chaffanet, M; Gressin, L; Preudhomme, C; Soenen-Cornu, V; Birnbaum, D, and Pebusque, MJ. (2000). MOZ is fused to p300 in an acute monocytic leukemia with t(8;22). *Genes Chromosomes. Cancer* (28) 138-144.
Bibliografía


Cheson, BD; Bennett, JM; Kopecky, KJ; Buchner, T; Willman, CL; Estey, EH; Schiffer, CA; Doehner, H; Tallman, MS; Lister, TA; Lo Coco, F; Willemze, R; Biondi, A; Hiddemann, W; Larson, RA; Lowenberg, B; Sanz, MA; Head, DR; Ohno, R, and Bloomfield, CD. (2003). Revised recommendations of the International Working Group for Diagnosis, Standardization of Response Criteria, Treatment Outcomes, and Reporting Standards for Therapeutic Trials in Acute Myeloid Leukemia. *J. Clin. Oncol.* (21) 4642-4649.

Cilloni, D; Carturan, S; Gottardi, E; Messa, F; Messa, E; Fava, M; Diverio, D; Guerrasio, A; Lo Coco, F, and Saglio, G. (2003). Down-modulation of the C/EBPalpha transcription factor in core binding factor acute myeloid leukemias. *Blood* (102) 2705-2706.


Bibliografía


de Botton, S; Fawaz, A; Chevret, S; Dombret, H; Thomas, X; Sanz, M; Guerci, A; San Miguel, JF; De La Serna, J; Stoppa, AM; Reman, O; Stamatoulas, A; Fey, M; Cahn, JY; Sotto, JJ; Bourhis, JH; Parry, A; Chomienne, C; Degos, L, and Fenaux, P. (2005). Autologous and allogeneic stem-cell transplantation as salvage treatment of acute promyelocytic leukemia initially treated with all-trans-retinoic acid: a retrospective analysis of the European acute promyelocytic leukemia group. *J. Clin. Oncol.* (23) 120-126.

Debernardi, S; Lillington, DM; Chaplin, T; Tomlinson, S; Amess, J; Rohatiner, A; Lister, TA, and Young, BD. (2003). Genome-wide analysis of acute myeloid leukemia with normal karyotype reveals a unique pattern of homeobox gene expression distinct from those with translocation-mediated fusion events. *Genes Chromosomes. Cancer* (37) 149-158.


Dohner, K; Schlenk, RF; Habdank, M; Scholl, C; Rucker, FG; Corbacioglu, A; Bullinger, L; Frohling, S, and Dohner, H. (2005). Mutant nucleophosmin (NPM1) predicts favorable prognosis in younger adults with acute myeloid leukemia and normal cytogenetics: interaction with other gene mutations. *Blood* (106) 3740-3746.


Dong, F; Brynes, RK; Tidow, N; Welte, K; Lowenberg, B, and Touw, IP. (1995). Mutations in the gene for the granulocyte colony-stimulating-factor
Bibliografía


Drabkin, HA; Parsy, C; Ferguson, K; Guilhot, F; Lacotte, L; Roy, L; Zeng, C; Baron, A; Hunger, SP; Varella-Garcia, M; Gemmill, R; Brizard, F; Brizard, A, and Roche, J. (2002). Quantitative HOX expression in chromosomally defined subsets of acute myelogenous leukemia. *Leukemia* (16) 186-195.


Esteve, J; Escoda, L; Martin, G; Rubio, V; Díaz-Mediavilla, J; Gonzalez, M; Rivas, C; Alvarez, C; Gonzalez San Miguel, JD; Brunet, S; Tomas, JF; Tormo, M; Sayas, MJ; Sanchez, GP; Colomer, D; Bolufer, P, and Sanz, MA. (2007). Outcome of patients with acute promyelocytic leukemia failing to front-line treatment with all-trans retinoic acid and anthracycline-based chemotherapy (PETHEMA protocols LPA96 and LPA99): benefit of an early intervention. *Leukemia*


Falini, B; Mecucci, C; Tiacci, E; Alcalay, M; Rosati, R; Pasqualucci, L; La Starza, R; Diverio, D; Colombo, E; Santucci, A; Bigerna, B; Pacini, R; Pucciarini, A; Liso, A; Vignetti, M; Fazi, P; Meani, N; Pettitrossi, V; Saglio, G; Mandelli, F; Lo Coco, F; Pelicci, PG, and Martelli, MF. (2005). Cytoplasmic nucleophosmin in acute myelogenous leukemia with a normal karyotype. *N. Engl. J. Med.* (352) 254-266.
Fenaux, P; Chastang, C; Chevret, S; Sanz, M; Dombret, H; Archimbaud, E; Fey, M; Rayon, C; Huguet, F; Sotto, JJ; Gardin, C; Makhoul, PC; Travade, P; Solary, E; Fegueux, N; Bordessoule, D; Miguel, JS; Link, H; Desablens, B; Stamatoullas, A; Deconinck, E; Maloisel, F; Castaigne, S; Preudhomme, C; and Degos, L. (1999). A randomized comparison of all transretinoic acid (ATRA) followed by chemotherapy and ATRA plus chemotherapy and the role of maintenance therapy in newly diagnosed acute promyelocytic leukemia. The European APL Group. Blood (94) 1192-1200.


Frohling, S; Schlenk, RF; Breitruck, J; Benner, A; Kreitmeier, S; Tobis, K; Dohner, H, and Dohner, K. (2002). Prognostic significance of activating FLT3 mutations in younger adults (16 to 60 years) with acute myeloid leukemia and normal cytogenetics: a study of the AML Study Group Ulm. Blood (100) 4372-4380.


Gale, RE; Hills, R; Pizzey, AR; Kottaridis, PD; Swirsky, D; Gilkes, AF; Nugent, E; Mills, KI; Wheatley, K; Solomon, E; Burnett, AK; Linch, DC, and Grimwade, D. (2005). Relationship between FLT3 mutation status, biologic characteristics, and response to targeted therapy in acute promyelocytic leukemia. Blood (106) 3768-3776.


Gattie, V; Degani, M; Rossi, FM; De Iuliis, A; Mazzocco, FT; Cesa, E; Aldinucci, D; Zagonel, V, and Pinto, A. (1999). The RET receptor tyrosine kinase, but not its specific ligand, GDNF, is preferentially expressed by acute leukaemias of monocytic phenotype and is up-regulated upon differentiation. Br. J. Haematol. (105) 225-240.
Giles, RH; Dauwerse, JG; Higgins, C; Petrij, F; Wessels, JW; Beverstock, GC; Dohner, H; Jotterand-Bellomo, M; Falkenburg, JH; Slater, RM; van Ommen, GJ; Hagemeijer, A; van der Reijden, BA, and Breuning, MH. (1997). Detection of CBP rearrangements in acute myelogenous leukemia with t(8;16). *Leukemia* (11) 2087-2096.

Golub, TR; Slonim, DK; Tamayo, P; Huard, C; Gaasenbeek, M; Mesirov, JP; Coller, H; Loh, ML; Downing, JR; Caligiuri, MA; Bloomfield, CD, and Lander, ES. (1999). Molecular classification of cancer: class discovery and class prediction by gene expression monitoring. *Science* (286) 531-537.


Grimwade, D; Walker, H; Harrison, G; Oliver, F; Chatters, S; Harrison, CJ; Wheatley, K; Burnett, AK, and Goldstone, AH. (2001). The predictive value of hierarchical cytogenetic classification in older adults with acute myeloid leukemia (AML): analysis of 1065 patients entered into the United Kingdom Medical Research Council AML11 trial. *Blood* (98) 1312-1320.

Grimwade, D; Walker, H; Oliver, F; Wheatley, K; Harrison, C; Harrison, G; Rees, J; Hann, I; Stevens, R; Burnett, A, and Goldstone, A. (1998). The importance of diagnostic cytogenetics on outcome in AML: analysis of 1,612 patients entered into the MRC AML 10 trial. The Medical Research Council Adult and Children's Leukaemia Working Parties. *Blood* (92) 2322-2333.


Haferlach, T; Kohlmann, A; Schnittger, S; Dugas, M; Hiddemann, W; Kern, W, and Schoch, C. (2005a). AML M3 and AML M3 variant each have a distinct gene expression signature but also share patterns different from other genetically defined AML subtypes. Genes Chromosomes. Cancer (43) 113-127.


Herr, AL; Labopin, M; Blaise, D; Milpied, N; Potter, M; Michallet, M; Heit, W; Ferrara, F; Esteve, J; Arcese, W; Ehninger, G; Rowe, JM; Kobbe, G; Rosselet, A; Bunjes, D; Rio, B; Brune, M; Nagler, A; Gorin, NC; Frassoni, F, and Rocha, V. (2007). HLA-identical sibling allogeneic peripheral blood stem cell transplantation with reduced intensity conditioning compared to autologous peripheral blood stem cell transplantation for elderly patients with de novo acute myeloid leukemia. Leukemia (21) 129-135.

Hiebert, SW; Reed-Inderbitzin, EF; Amann, J; Irvin, B; Durst, K, and Linggi, B. (2003). The t(8;21) fusion protein contacts co-repressors and histone deacetylases to repress the transcription of the p14ARF tumor suppressor. *Blood Cells Mol. is.* (30) 177-183.


Kell, WJ; Burnett, AK; Chopra, R; Yin, JA; Clark, RE; Rohatiner, A; Culligan, D; Hunter, A; Prentice, AG, and Milligan, DW. (2003). A feasibility study of simultaneous administration of gemtuzumab ozogamicin with intensive chemotherapy in induction and consolidation in younger patients with acute myeloid leukemia. *Blood* (102) 4277-4283.


Kindle, KB; Troke, PJ; Collins, HM; Matsuda, S; Bossi, D; Bellodi, C; Kalkhoven, E; Salomoni, P; Pelicci, PG; Minucci, S, and Heery, DM. (2005a). MOZ-TIF2 inhibits transcription by nuclear receptors and p53 by impairment of CBP function. *Mol. Cell Biol.* (25) 988-1002.
Bibliografía

Kindle, KB; Troke, PJ; Collins, HM; Matsuda, S; Bossi, D; Bellodi, C; Kalkhoven, E; Salomoni, P; Pelicci, PG; Minucci, S, and Heery, DM. (2005b). MOZ-TIF2 inhibits transcription by nuclear receptors and p53 by impairment of CBP function. *Mol. Cell Biol.* (25) 988-1002.


Kiyoi, H; Naoe, T; Nakano, Y; Yokota, S; Minami, S; Miyawaki, S; Asou, N; Kuriyama, K; Jinmai, I; Shimazaki, C; Akiyama, H; Saito, K; Oh, H; Motoji, T;Omoto, E; Saito, H; Ohno, R, and Ueda, R. (1999). Prognostic implication of FLT3 and N-RAS gene mutations in acute myeloid leukemia. *Blood* (93) 3074-3080.


Kohler, T; Schill, C; Deininger, MW; Krahil, R; Borchert, S; Hasenclever, D; Leiblein, S; Wagner, O, and Niederwieser, D. (2002). High Bad and Bax mRNA expression correlate with negative outcome in acute myeloid leukemia (AML). *Leukemia* (16) 22-29.


Bibliografía


Kottaridis, PD; Gale, RE; Frew, ME; Harrison, G; Langabeer, SE; Belton, AA; Walker, H; Wheatley, K; Bowen, DT; Burnett, AK; Goldstone, AH, and Linch, DC. (2001). The presence of a FLT3 internal tandem duplication in patients with acute myeloid leukemia (AML) adds important prognostic information to cytogenetic risk group and response to the first cycle of chemotherapy: analysis of 854 patients from the United Kingdom Medical Research Council AML 10 and 12 trials. Blood (98) 1752-1759.


Kung, AL; Rebel, VI; Bronson, RT; Ch'ng, LE; Sieff, CA; Livingston, DM, and Yao, TP. (2000). Gene dose-dependent control of hematopoiesis and hematologic tumor suppression by CBP. Genes ev. (14) 272-277.


Leith, CP; Kopecky, KJ; Chen, IM; Eijdems, L; Slovak, ML; McConnell, TS; Head, DR; Weick, J; Grever, MR; Appelbaum, FR, and Willman, CL. (1999). Frequency and clinical significance of the expression of the multidrug resistance proteins MDR1/P-glycoprotein, MRP1, and LRP in acute myeloid leukemia: a Southwest Oncology Group Study. Blood (94) 1086-1099.

Lengfelder, E; Reichert, A; Schoch, C; Haase, D; Haferlach, T; Loffler, H; Staib, P; Heyll, A; Seifarth, W; Saussele, S; Fonatsch, C; Gassmann, W; Ludwig, WD; Hochhaus, A; Beelen, D; Aul, C; Sauerland, MC; Heinecke, A; Hehlmann, R; Wormann, B; Hiddemann, W, and Buchner, T. (2000). Double induction strategy including high dose cytarabine in combination with all-trans retinoic acid: effects in patients with newly diagnosed acute promyelocytic leukemia. German AML Cooperative Group. Leukemia (14) 1362-1370.


Libura, M; Asnafi, V; Tu, A; Delabesse, E; Tigaud, I; Cymbalista, F; naceur-Griscelli, A; Villarese, P; Solbu, G; Hagemeijer, A; Beldjord, K; Hermine, O, and Macintyre, E. (2003). FLT3 and MLL intragenic abnormalities in AML reflect a common category of genotoxic stress. *Blood* (102) 2198-2204.


Lo Coco, F; Romano, A; Mengarelli, A; Diverio, D; Iori, AP; Moleti, ML; De Santis, S; Cerretti, R; Mandelli, F, and Arcese, W. (2003). Allogeneic stem cell transplantation for advanced acute promyelocytic leukemia: results in patients treated in second molecular remission or with molecularly persistent disease. *Leukemia* (17) 1930-1933.


Mandelli, F; Diverio, D; Avvisati, G; Luciano, A; Barbui, T; Bernasconi, C; Broccia, G; Cerri, R; Falda, M; Fioritoni, G; Leoni, F; Liso, V; Petti, MC; Rodeghiero, F; Saglio, G; Vegna, ML; Visani, G; Jehn, U; Willemze, R; Muus, P; Pelicci, PG; Biondi, A, and Lo Coco, F. (1997). Molecular remission in PML/RAR alpha-positive acute promyelocytic leukemia by combined all-trans retinoic acid and idarubicin (AlDA) therapy. Gruppo Italiano-Malattie Ematologiche Maligne dell’Adulto and Associazione Italiana di Ematologia ed Oncologia Pediatrica Cooperative Groups. *Blood* (90) 1014-1021.

Marcucci, G; Baldus, CD; Ruppert, AS; Radmacher, MD; Mrozek, K; Whitman, SP; Kolitz, JE; Edwards, CG; Vardiman, JW; Powell, BL; Baer, MR; Moore, JO; Perrotti, D; Caligiuri, MA; Carroll, AJ; Larson, RA; de la Chapelle, A, and Bloomfield, CD. (2005b). Overexpression of the ETS-related gene, ERG, predicts a worse outcome in acute myeloid leukemia with normal karyotype: a Cancer and Leukemia Group B study. J. Clin. Oncol. (23) 9234-9242.


Martin, ME; Milne, TA; Bloyer, S; Galoian, K; Shen, W; Gibbs, D; Brock, HW; Slany, R, and Hess, JL. (2003). Dimerization of MLL fusion proteins immortalizes hematopoietic cells. Cancer Cell (4) 197-207.


Milne, TA; Briggs, SD; Brock, HW; Martin, ME; Gibbs, D; Allis, CD, and Hess, JL. (2002). MLL targets SET domain methyltransferase activity to Hox gene promoters. Mol. Cell (10) 1107-1117.


Bibliografía

Mistry, AR; Felix, CA; Whitmarsh, RJ; Mason, A; Reiter, A; Cassinat, B; Parry, A; Walz, C; Wiemels, JL; Segal, MR; Ades, L; Blair, IA; Osheroff, N; Peniket, AJ; Lafage-Pochitaloff, M; Cross, NC; Chomienne, C; Solomon, E; Fenaux, P, and Grimwade, D. (2005). DNA topoisomerase II in therapy-related acute promyelocytic leukemia. N. Engl. J. Med. (352) 1529-1538.

Mohty, M; de Lavallade, H; Ladaique, P; Faucher, C; Vey, N; Coso, D; Stoppa, AM; Gastaut, JA, and Blaise, D. (2005). The role of reduced intensity conditioning allogeneic stem cell transplantation in patients with acute myeloid leukemia: a donor vs no donor comparison. Leukemia (19) 916-920.

Moreno, I; Martin, G; Bolufer, P; Barragan, E; Rueda, E; Roman, J; Fernandez, P; Leon, P; Mena, A; Cervera, J; Torres, A, and Sanz, MA. (2003). Incidence and prognostic value of FLT3 internal tandem duplication and D835 mutations in acute myeloid leukemia. Haematologica (88) 19-24.


Mueller, BU; Pabst, T; Osato, M; Asou, N; Johansen, LM; Minden, MD; Behre, G; Hiddemann, W; Ito, Y, and Tenen, DG. (2002). Heterozygous PU.1 mutations are associated with acute myeloid leukemia. Blood (100) 998-1007.

Muller, C; Yang, R; Park, DJ; Serve, H; Berdel, WE, and Koeffler, HP. (2000). The aberrant fusion proteins PML-RAR alpha and PLZF-RAR alpha contribute to the overexpression of cyclin A1 in acute promyelocytic leukemia. Blood (96) 3894-3899.

Muller-Tidow, C; Schwable, J; Steffen, B; Tidow, N; Brandt, B; Becker, K; Schulze-Bahr, E; Halfter, H; Vogt, U; Metzger, R; Schneider, PM; Buchner, T; Brandts, C; Berdel, WE, and Serve, H. (2004). High-throughput analysis of genome-wide receptor tyrosine kinase expression in human cancers identifies potential novel drug targets. Clin. Cancer Res. (10) 1241-1249.


Murati, A; Adelaide, J; Quilichini, B; Remy, V; Sainty, D; Stoppa, AM; Bernard, P; Olschwang, S; Birnbaum, D; Chaffanet, M, and Mozziconacci, MJ. (2007). New types of MYST3-CBP and CBP-MYST3 fusion transcripts in t(8;16)(p11;p13) acute myeloid leukemias. Haematologica (92) 262-263.
Bibliografía


Niu, C; Yan, H; Yu, T; Sun, HP; Liu, JX; Li, XS; Wu, W; Zhang, FQ; Chen, Y; Zhou, L; Li, JM; Zeng, XY; Yang, RR; Yuan, MM; Ren, MY; Gu, FY; Cao, Q; Gu, BW; Su, XY; Chen, GQ; Xiong, SM; Zhang, TD; Waxman, S; Wang, ZY; Chen, Z; Hu, J; Shen, ZX, and Chen, SJ. (1999). Studies on treatment of acute promyelocytic leukemia with arsenic trioxide: remission induction, follow-up, and molecular monitoring in 11 newly diagnosed and 47 relapsed acute promyelocytic leukemia patients. *Blood* (94) 3315-3324.


Ozeki, K; Kiyoi, H; Hirose, Y; Iwai, M; Ninomiya, M; Kodera, Y; Miyawaki, S; Kuriyama, K; Shimazaki, C; Akiyama, H; Nishimura, M; Motoji, T; Shinagawa, K; Takeshita, A; Ueda, R; Ohno, R; Emi, N, and Naoe, T. (2004). Biologic and clinical significance of the FLT3 transcript level in acute myeloid leukemia. *Blood* (103) 1901-1908.


Panagopoulos, I; Fioretos, T; Isaksson, M; Mitelman, F; Johansson, B; Theorin, N, and Juliusson, G. (2002). RT-PCR analysis of acute myeloid leukemia with t(8;16)(p11;p13): identification of a novel MOZ/CBP transcript and

Panagopoulos, I; Fioretos, T; Isaksson, M; Samuelsson, U; Billstrom, R; Strombeck, B; Mitelman, F, and Johansson, B. (2001). Fusion of the MORF and CBP genes in acute myeloid leukemia with the t(10;16)(q22;p13). Hum. Mol. Genet. (10) 395-404.


Paschka, P; Marcucci, G; Ruppert, AS; Mrozek, K; Chen, H; Kittles, RA; Vukosavljevic, T; Perrotti, D; Vardiman, JW; Carroll, AJ; Kolitz, JE; Larson, RA, and Bloomfield, CD. (2006). Adverse prognostic significance of KIT mutations in adult acute myeloid leukemia with inv(16) and t(8;21): a Cancer and Leukemia Group B Study. J. Clin. Oncol. (24) 3904-3911.


Pelletier, N; Champagne, N; Lim, H, and Yang, XJ. (2003). Expression, purification, and analysis of MOZ and MORF histone acetyltransferases. Methods (31) 24-32.

Petti, MC; Pinazzi, MB; Diverio, D; Romano, A; Petrucci, MT; De Santis, S; Meloni, G; Tafuri, A; Mandelli, F, and Lo Coco, F. (2001). Prolonged molecular remission in advanced acute promyelocytic leukaemia after

Poppe, B; Vandesompele, J; Schoch, C; Lindvall, C; Mrozek, K; Bloomfield, CD; Beverloo, HB; Michaux, L; Dastugue, N; Herens, C; Yigit, N; De Paepe, A; Hagemeijer, A, and Speleman, F. (2004). Expression analyses identify MLL as a prominent target of 11q23 amplification and support an etiologic role for MLL gain of function in myeloid malignancies. Blood (103) 229-235.

Porcu, P; Cripe, LD; Ng, EW; Bhatia, S; Danielson, CM; Orazi, A, and McCarthy, LJ. (2000). Hyperleukocytic leukemias and leukostasis: a review of pathophysiology, clinical presentation and management. Leuk. Lymphoma (39) 1-18.


Preudhomme, C; Sagot, C; Boissel, N; Cayuela, JM; Tigaud, I; de Botton, S; Thomas, X; Raffoux, E; Lamandin, C; Castaigne, S; Fenaux, P, and Dombret, H. (2002). Favorable prognostic significance of CEBPA mutations in patients with de novo acute myeloid leukemia: a study from the Acute Leukemia French Association (ALFA). Blood (100) 2717-2723.

Quesnel, B; Kantarjian, H; Bjergaard, JP; Brault, P; Estey, E; Lai, JL; Tilly, H; Stoppa, AM; Archimbaud, E, and Harousseau, JL. (1993). Therapy-related acute myeloid leukemia with t(8;21), inv(16), and t(8;16): a report on 25 cases and review of the literature. J. Clin. Oncol. (11) 2370-2379.


Roche, J; Zeng, C; Baron, A; Gadgil, S; Gemmill, RM; Tigaud, I; Thomas, X, and Drabkin, HA. (2004). Hox expression in AML identifies a distinct subset of patients with intermediate cytogenetics. Leukemia (18) 1059-1063.

Rowley, JD; Reshmi, S; Sobulo, O; Musvee, T; Anastasi, J; Raimondi, S; Schneider, NR; Barredo, JC; Cantu, ES; Schlegelberger, B; Behm, F; Doggett, NA; Borrow, J, and Zeleznik-Le, N. (1997). All patients with
the T(11;16)(q23;p13.3) that involves MLL and CBP have treatment-related hematologic disorders. *Blood* (90) 535-541.

Sanz, MA; Lo Coco, F; Martin, G; Avvisati, G; Rayon, C; Barbui, T; Diaz-Mediavilla, J; Fioritoni, G; Gonzalez, JD; Liso, V; Esteve, J; Ferrara, F; Bolufer, P; Bernasconi, C; Gonzalez, M; Rodeghiero, F; Colomer, D; Petti, MC; Ribera, JM, and Mandelli, F. (2000). Definition of relapse risk and role of nonanthracycline drugs for consolidation in patients with acute promyelocytic leukemia: a joint study of the PETHEMA and GIMEMA cooperative groups. *Blood* (96) 1247-1253.

Sanz, MA; Martin, G; Gonzalez, M; Leon, A; Rayon, C; Rivas, C; Colomer, D; Amutio, E; Capote, FJ; Milone, GA; De La Serna, J; Roman, J; Barragan, E; Bergua, J; Escoda, L; Parody, R; Negri, S; Calasanz, MJ, and Bolufer, P. (2004). Risk-adapted treatment of acute promyelocytic leukemia with all-trans-retinoic acid and anthracycline monochemotherapy: a multicenter study by the PETHEMA group. *Blood* (103) 1237-1243.

Sanz, MA; Martin, G; Rayon, C; Esteve, J; Gonzalez, M; Diaz-Mediavilla, J; Bolufer, P; Barragan, E; Terol, MJ; Gonzalez, JD; Colomer, D; Chillon, C; Rivas, C; Gomez, T; Ribera, JM; Bornstein, R; Roman, J; Calasanz, MJ; Arias, J; Alvarez, C; Ramos, F, and Deben, G. (1999). A modified AIDA protocol with anthracycline-based consolidation results in high antileukemic efficacy and reduced toxicity in newly diagnosed PML/RARalpha-positive acute promyelocytic leukemia. PETHEMA group. *Blood* (94) 3015-3021.


Schlenk, RF; Benner, A; Krauter, J; Buchner, T; Sauerland, C; Ehninger, G; Schaich, M; Mohr, B; Niederwieser, D; Krah, R; Pasold, R; Dohner, K; Ganser, A; Dohner, H, and Heil, G. (2004). Individual patient data-based meta-analysis of patients aged 16 to 60 years with core binding factor acute myeloid leukemia: a survey of the German Acute Myeloid Leukemia Intergroup. *J. Clin. Oncol.* (22) 3741-3750.

Schmidt, HH; Strehl, S; Thaler, D; Strunk, D; Sill, H; Linksch, W; Jager, U; Sperr, W; Greinix, HT; Konig, M; Emberger, W, and Haas, OA. (2004). RT-PCR and FISH analysis of acute myeloid leukemia with t(8;16)(p11;p13) and chimeric MOZ and CBP transcripts: breakpoint cluster region and clinical implications. *Leukemia* (18) 1115-1121.

Schnittger, S; Kinkel, U; Schoch, C; Heinecke, A; Haase, D; Haferlach, T; Buchner, T; Wormann, B; Hiddemann, W, and Griesinger, F. (2000). Screening for MLL tandem duplication in 387 unselected patients with
AML identify a prognostically unfavorable subset of AML. *Leukemia* (14) 796-804.


Serrano, E; Lasa, A; Perea, G; Carnicer, MJ; Brunet, S; Aventin, A; Sierra, J, and Nomdedeu, JF. (2006). Acute Myeloid Leukemia Subgroups Identified by Pathway-Restricted Gene Expression Signatures. *Acta Haematol.* (116) 77-89.


Bibliografía


Slovak, ML; Kopecky, KJ; Cassileth, PA; Harrington, DH; Theil, KS; Mohamed, A; Paietta, E; Willman, CL; Head, DR; Rowe, JM; Forman, SJ, and Appelbaum, FR. (2000). Karyotypic analysis predicts outcome of preremission and postremission therapy in adult acute myeloid leukemia: a Southwest Oncology Group/Eastern Cooperative Oncology Group Study. *Blood* (96) 4075-4083.


Soignet, SL; Frankel, SR; Douer, D; Tallman, MS; Kantarjian, H; Calleja, E; Stone, RM; Kalaycio, M; Scheinberg, DA; Steinherz, P; Sievers, EL; Coutre, S; Dahlberg, S; Ellison, R, and Warrell, RP, Jr. (2001). United States multicenter study of arsenic trioxide in relapsed acute promyelocytic leukemia. *J. Clin. Oncol.* (19) 3852-3860.


Suciu, S; Mandelli, F; de Witte, T; Zittoun, R; Gallo, E; Labar, B; De Rosa, G; Belhabri, A; Giustolisi, R; Delarue, R; Liso, V; Mirto, S; Leone, G; Bourhis, JH; Fioritoni, G; Jehn, U; Amadori, S; Fazi, P; Hagemeijer, A, and Willemze, R. (2003). Allogeneic compared with autologous stem cell transplantation in the treatment of patients younger than 46 years with acute myeloid leukemia (AML) in first complete remission (CR1): an intention-to-treat analysis of the EORTC/GIMEMAAML-10 trial. *Blood* (102) 1232-1240.


Tallman, MS; Andersen, JW; Schiffer, CA; Appelbaum, FR; Feusner, JH; Woods, WG; Ogden, A; Weinstein, H; Shepherd, L; Willman, C; Bloomfield, CD; Rowe, JM, and Wiernik, PH. (2002). All-trans retinoic acid in acute promyelocytic leukemia: long-term outcome and prognostic factor analysis from the North American Intergroup protocol. *Blood* (100) 4298-4302.


Thiede, C; Steudel, C; Mohr, B; Schaich, M; Schakel, U; Platzbecker, U; Wermke, M; Bornhauser, M; Ritter, M; Neubauer, A; Ehninger, G, and Illmer, T. (2002). Analysis of FLT3-activating mutations in 979 patients with acute myelogenous leukemia: association with FAB subtypes and identification of subgroups with poor prognosis. *Blood* (99) 4326-4335.

Thomas, T; Corcoran, LM; Gugasyan, R; Dixon, MP; Brodnicki, T; Nutt, SL; Metcalf, D, and Voss, AK. (2006a). Monocytic leukemia zinc finger protein is essential for the development of long-term reconstituting hematopoietic stem cells. *Genes ev.* (20) 1175-1186.


Velloso, ER; Mecucci, C; Michaux, L; Van Orshoven, A; Stul, M; Boogaerts, M; Bosly, A; Cassiman, JJ, and Van Den Berghe, H. (1996). Translocation t(8;16)(p11;p13) in acute non-lymphocytic leukemia: report on two new cases and review of the literature. *Leuk. Lymphoma* (21) 137-142.

Vey, N; Mozziconacci, MJ; Groulet-Martinec, A; Debono, S; Finetti, P; Carbuccia, N; Beillard, E; Devilard, E; Arnoilet, C; Coso, D; Sainty, D; Xerri, L; Stoppa, AM; Lafage-Pochitaloff, M; Nguyen, C; Houngatte, R; Blaise, D; Maraninchi, D; Birg, F; Birnbaum, D, and Bertucci, F. (2004). Identification of new classes among acute myelogenous leukaemias with normal karyotype using gene expression profiling. *Oncogene* (23) 9381-9391.

Visani, G; Olivieri, A; Malagola, M; Brunori, M; Piccaluga, PP; Capelli, D; Pomponio, G; Martinelli, G; Isidori, A; Sparaventi, G, and Leoni, P. (2006). Consolidation therapy for adult acute myeloid leukemia: a systematic analysis according to evidence based medicine. *Leuk. Lymphoma* (47) 1091-1102.


Vizmanos, JL; Larrayoz, MJ; Lahortiga, I; Floristan, F; Alvarez, C; Odero, MD; Novo, FJ, and Calasanz, MJ. (2003). t(10;16)(q22;p13) and MORF-CREBBP fusion is a recurrent event in acute myeloid leukemia. *Genes Chromosomes. Cancer* (36) 402-405.


Whitman, SP; Archer, KJ; Feng, L; Baldus, C; Becknell, B; Carlson, BD; Carroll, AJ; Mrozek, K; Vardiman, JW; George, SL; Kolitz, JE; Larson, RA; Bloomfield, CD, and Caligiuri, MA. (2001). Absence of the wild-type allele predicts poor prognosis in adult de novo acute myeloid leukemia with normal cytogenetics and the internal tandem duplication of FLT3: a cancer and leukemia group B study. *Cancer Res.* (61) 7233-7239.
Yamamoto, Y; Kiyoi, H; Nakano, Y; Suzuki, R; Kadera, Y; Miyawaki, S; Asou, N; Kuriyama, K; Yagasaki, F; Shimazaki, C; Akiyama, H; Saito, K; Nishimura, M; Motoji, T; Shinagawa, K; Takeshita, A; Saito, H; Ueda, R; Ohno, R, and Naoe, T. (2001). Activating mutation of D835 within the activation loop of FLT3 in human hematologic malignancies. Blood (97) 2434-2439.

