

応用薬理学研究室

Applied Pharmacology

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◆ 原 著

- 1) Yamamoto K, Izumi Y, Arifuku M, Kume T, Sawada H. α -Synuclein oligomers mediate the aberrant form of spike-induced calcium release from IP₃ receptor. *Sci Rep.* 2019 Nov 4; 9(1): 15977. doi: 10.1038/s41598-019-52135-3. (2019年末掲載分)
- 2) Taguchi K, Izumi Y, Takada-Takatori Y, Akaike A, Kume T. Protective effect of 2',3'-dihydroxy-4',6'-dimethoxychalcone on glutamate-induced neurotoxicity in primary cortical cultures. *Biol Pharm Bull.* 2020; 43(1): 184-7. doi: 10.1248/bpb.b19-00718.
- 3) Nishino R, Aoyagi S, Suzuki M, Ueda A, Okumura Y, Takahashi T, Hosomi R, Fukunaga K, Uta D, Takazawa T, and Fujii T. Development of Artificial Skin Using Keratin Film for Evaluation of Puncture Performance of Microneedle. *Journal of Robotics and Mechatronics.* 2020; 32(2): 351-61.
- 4) Uta D, Andoh T, Kume T, Yoshimura M, Koga K. Chronic pain rat models enhance spontaneous glutamatergic transmission on spinal dorsal horn. *The Journal of Functional Diagnosis of the Spinal Cord.* 2020; in press.
- 5) Andoh T, Suzuki K, Konno M, Tsuneyama K, Kuraishi Y. Pharmacological Characterization of a Novel Mouse Model of Cholestatic Pruritus. *Biol Pharm Bull.* 2020; 43(7): 1111-7. doi: 10.1248/bpb.b20-00097.
- 6) Yamamoto S, Aoyagi S, Yamada M, Takahashi T, Suzuki M, Nagashima T, Kunugi A, Chiyonobu M, Kuroiwa T, Hosomi R, Fukunaga K, Uta D, Takazawa T, Hikitsuchi T, Kawajiri Y, Nakayama K. A puncturing device that mimics the mechanism of mosquito's proboscis and labium -Verification of the effect of skin deformation/needle buckling prevention mechanism and puncture experiment on artificial skin and experimental animals-. *Int. J. of Automation Technology.* 2020 Jan; 14(1): 117-27. doi: 10.20965/ijat.2020.p0117.
- 7) Murakami K, Yoshimura M, Nakagawa S, Kume T, Kondo T, Inoue H, Irie K. Evaluation of Toxic Amyloid 42 Oligomers in Rat Primary Cerebral Cortex Cells and Human iPS-derived Neurons Treated with 10-Me-Aplog-1, a New PKC Activator. *Int J Mol Sci.* 2020 Feb 11; 21(4): 1179. doi: 10.3390/ijms21041179.
- 8) Inami Y, Uta D, Andoh T. Neuronal hyperexcitability and astrocyte activation in spinal dorsal horn of a dermatitis mouse model with cutaneous hypersensitivity. *Neurosci Lett.* 2020 Feb 16; 720: 134784. doi: 10.1016/j.neulet.2020.134784.
- 9) Mizawa M, Andoh T, Shimizu T. Gardenia Fruit-Related Blue-Gray Skin Pigmentation. *JAMA Dermatol.* 2020 Mar 1; 156(3): 351-3. doi: 10.1001/jamadermatol.2019.4682.
- 10) Ueda Y, Uta D, Tanbo S, Kawabata K, Kanayama S, Osaki M, Nozawa N, Matsumoto T, Andoh T. Inhibitory effect of amenamevir on acute herpetic pain and postherpetic neuralgia in mice infected with herpes simplex virus-1. *J Dermatol Sci.* 2020 Apr; 98(1): 50-7. doi: 10.1016/j.jdermsci.2020.03.004.
- 11) Delgado-Wicke P, Rodríguez-Luna A, Ikeyama Y, Honma Y, Kume T, Gutierrez M, Lorrio S, Juarranz Á, González S. Fernblock® Upregulates NRF2 Antioxidant Pathway and Protects Keratinocytes From PM 2.5-Induced Xenotoxic Stress. *Oxid Med Cell Longev.* 2020 Apr 14; 2020:2908108. doi: 10.1155/2020/2908108.
- 12) Yoshihisa Y, Andoh T, Rehman MU, Shimizu T. The regulation of protein kinase casein kinase II by apigenin is involved in the inhibition of ultraviolet B-induced macrophage migration inhibitory factor-mediated hyperpigmentation. *Phytother Res.* 2020 Jun; 34(6): 1320-8. doi: 10.1002/ptr.6597.
- 13) Uta D, Hattori T, Yoshimura M. Effect of alpha 1-adrenoceptor antagonists on postsynaptic sensitivity in substantia gelatinosa neurons from lumbo-sacral spinal cord in rats using slice patch-clamp technique for mEPSC. *Int Neurorol J.* 2020 Jun; 24(2): 135-43. doi: 10.5213/inj.1938250.125.
- 14) Uta D, Hattori T, Yoshimura M. Differential effects of alpha 1-adrenoceptor antagonists on the postsynaptic sensitivity: Using slice patch-clamp technique for IPSC in substantia gelatinosa neurons from lumbo-sacral spinal cord in rats. *Int Neurorol J.* 2020 Jun; 24(2): 127-34. doi: 10.5213/inj.1938248.124.
- 15) Kiguchi N, Uta D, Ding H, Uchida H, Saika F, Matsuzaki S, Fukazawa Y, Abe M, Sakimura K, Ko MC, Kishioka S. GRP

- receptor and AMPA receptor cooperatively regulate itch-responsive neurons in the spinal dorsal horn. *Neuropharmacology*. 2020 Jun 15; 170: 108025. doi: 10.1016/j.neuropharm.2020.
- 16) Inose Y, Izumi Y, Takada-Takatori Y, Akaike A, Koyama Y, Kaneko S, Kume T. Protective effects of Nrf2-ARE activator on dopaminergic neuronal loss in Parkinson disease model mice: Possible involvement of heme oxygenase-1. *Neurosci Lett*. 2020 Sep 25; 736: 135268. doi: 10.1016/j.neulet.2020.135268.
- 17) Nakata T, Doi A, Uta D, Yoshimura M, Shin MC. Excessive exercise induces cardiac arrhythmia in a young fibromyalgia mouse model. *PLoS One*. 2020 Sep 30; 15(9): e0239473. doi: 10.1371/journal.pone.0239473.
- 18) Murakami K, Yamaguchi T, Izuo N, Kume T, Hara H, Irie K. Synthetic and biophysical studies on the toxic conformer in amyloid β with the E22 Δ mutation in Alzheimer pathology. *ACS Chem Neurosci*. 2020 Oct 7; 11(19): 3017-24. doi: 10.1021/acscchemneuro.0c00331.
- 19) Nakata T, Doi A, Uta D, Shin MC, Yoshimura M. Free gait in a shallow pool accelerates recovery after exercise in model mice with fibromyalgia. *J Exerc Rehabil*. 2020 Oct 27; 16(5): 398-409. doi: 10.12965/jer.2040672.336.

◆ 総 説

- 1) 久米利明, 高鳥悠記. 経口摂取型日焼け止めの効果と注意点. *BEAUTY*. 2020; 3(2): 21-26.
- 2) 歌 大介. 脊髄におけるかゆみ情報伝達機構. *ファルマシア*. 2020 Sep; 56(9): 825-829.

◆ 学会報告

- 1) Ohsawa M, Miyamoto K, Uta D, Kume K. L-Lactate-induced activation of PKA pathway sensitizes nociceptive transmission in mice. 7th meeting of the Hungarian neuroscience society IBRO2020 workshop; 2020 Jan 29-30; Szeged.
- 2) Uta D, Tsuboshima K, Wakatsuki K, Taguchi T. Suppressive effects of amitriptyline and duloxetine on spinal dorsal horn neurons sensitized in a rat model of fibromyalgia. National Institute of Physiological Sciences International Workshop on Frontiers in Defensive Survival Circuit Research "Pain and Survival Strategy (The 2nd Pain and Amygdala Symposium)"; 2020 Jan 7-8; Okazaki.
- 3) Maesaka M*, Uta D, Kume T, Andoh T. Prophylactic repetitive administration of aucubin attenuates oxaliplatin-induced mechanical allodynia through the inhibition of spinal astrocyte activation. National Institute of Physiological Sciences International Workshop on Frontiers in Defensive Survival Circuit Research "Pain and Survival Strategy (The 2nd Pain and Amygdala Symposium)"; 2020 Jan 7-8; Okazaki.
- 4) Tanbo S*, Uta D, Kume T, Andoh T. Involvement of macrophages in herpetic pain in herpes simplex virus type-I infected mice. National Institute of Physiological Sciences International Workshop on Frontiers in Defensive Survival Circuit Research "Pain and Survival Strategy (The 2nd Pain and Amygdala Symposium)"; 2020 Jan 7-8; Okazaki.
- 5) Aoyagi S, Sakai Y, Suzuki M, Hosomi R, Fukunaga K, Uta D, Takazawa T, Hikitsuchi T, Kawajiri Y, Nakayama K, Li T, Tominaga M. Study on analgesic effect of mosquito saliva -Examination of action on TRPV1 receptor by patch-clamp method-. National Institute of Physiological Sciences International Workshop on Frontiers in Defensive Survival Circuit Research "Pain and Survival Strategy (The 2nd Pain and Amygdala Symposium)"; 2020 Jan 7-8; Okazaki.
- 6) 歌大介, 吉村恵, 古賀浩平. 慢性疼痛モデルラットは脊髄後角における自発的興奮性伝達を促進する. 第41回脊髄機能診断研究会 ; 2020 Feb 1 ; 東京.
- 7) 安東嗣修, 安藤有紀, 歌大介, 久米利明. Thromboxane A2 is involve in the skin inflammation in mice with atopy-like dermatitis. The 93th Annual Meeting of the Japan Pharmacological Society; 2020 Mar 16-18 ; 横浜 (紙面開催).
- 8) 歌大介, 安東嗣修, 久米利明, 吉村恵, 古賀浩平. Neuropathic and inflammatory pain increases glutamatergic excitatory postsynaptic current on adult rat spinal dorsal horn neurons. The 93th Annual Meeting of the Japan Pharmacological Society; 2020 Mar 16-18 ; 横浜 (紙面開催).
- 9) 久米利明. グルタミン酸神経系の変調に着目した神経疾患の理解と治療薬開発への道筋. 日本薬学会第140年会; 2020 Mar 25-28; 京都 (紙面開催).
- 10) 高鳥悠記, 水川裕美子, 漆谷徹郎, 泉安彦, 赤池昭紀, 土田勝晴, 久米利明. ドネペジルは細胞内輸送制御分子sorting nexin 33の発現量を増大してアミロイド前駆タンパク質のエンドサイトーシスを減少させる. 日本薬学会第140年会 ; 2020 Mar 25-28 ; 京都 (紙面開催).
- 11) 今井理裟, 高鳥悠記, 野々口茉奈, 庄野七海子, 泉安彦, 赤池昭紀, 久米利明, 土田勝晴. 青ジソ由来DDCによる慢性接触皮膚炎モデルマウスの耳介肥厚抑制作用の機序. 日本薬学会第140年会 ; 2020 Mar 25-28 ; 京都 (紙面開催).

- 面開催).
- 12) 平松元気*, 歌大介, 三原憲一, 安東嗣修, 久米利明. Panaxytriolのミクログリア活性化に対する抑制作用機序の解析. 第71回日本薬理学会北部会 ; 2020 Sep 4 ; 仙台.
 - 13) 平松元気*, 歌大介, 三原憲一, 安東嗣修, 久米利明. PanaxytriolによるLPS誘発ミクログリアの活性化抑制作用. 富山薬学研究会2020 ; 2020 Nov 14 ; 富山.

◆ その他

- 1) 歌大介. 慢性疼痛モデルラットを用いた電気生理学的解析と治療薬の探索. 第2回運動神経変性疾患の治療を目指した創薬研究会 ; 2020 Jan 16 ; 金沢.
- 2) 平松元気**. ミクログリアの活性化に対するpanaxytriolの作用機序の解析. 第2回運動神経変性疾患の治療を目指した創薬研究会 ; 2020 Jan 16 ; 金沢.
- 3) 歌大介. In vivo標本からの電気生理学的記録-神経障害性疼痛モデルラットを用いた解析結果と新規in vivo記録法の紹介. 新潟大学医学部麻酔科セミナー ; 2020 Jan 20 ; 新潟.
- 4) 歌大介. 運動神経変性疾患の治療を目指した創薬研究. 令和元年度北陸地区国立大学学術研究推進支援研究成果報告会 ; 2020 Feb 10 ; 金沢.
- 5) 平松元気**. 令和元年度薬学部卒業研究発表会・ポスター発表会：卒業論文優秀発表賞. 2020 Mar ; 富山.
- 6) 片山さくら**. 令和元年度薬学部卒業研究発表会・ポスター発表会：優秀ポスター賞. 2020 Mar ; 富山.