



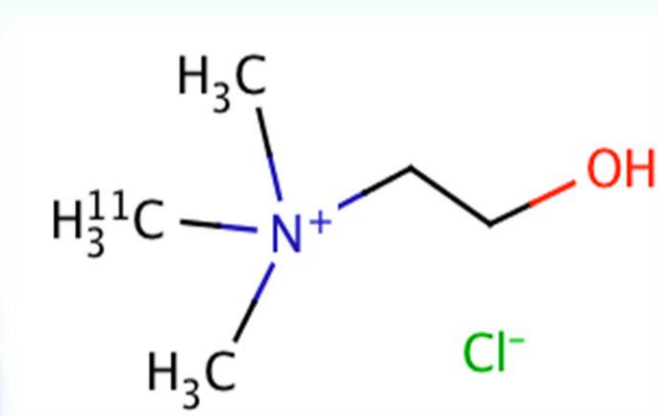
PRODUCTION OF [¹¹C] CHOLINE IN THE UNIVERSITY INSTITUTE FOR PET – NEW PERSPECTIVE IN DIAGNOSTICS OF PROSTATE MALIGNANCY IN REPUBLIC OF MACEDONIA

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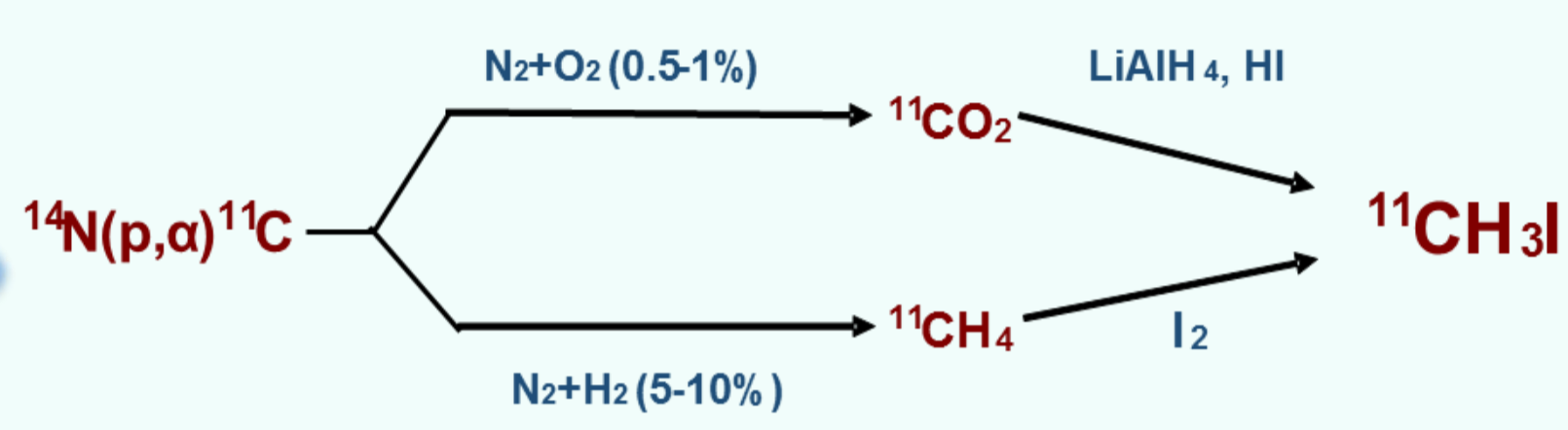
[¹¹C] Choline injection is radiopharmaceutical for oncological PET imaging of tumors which overexpress choline kinase.



The most important clinical application of this PET radiopharmaceutical is in **prostate cancer** that can be visualized precisely, having differentiated localization located in comparison with benign tissue.

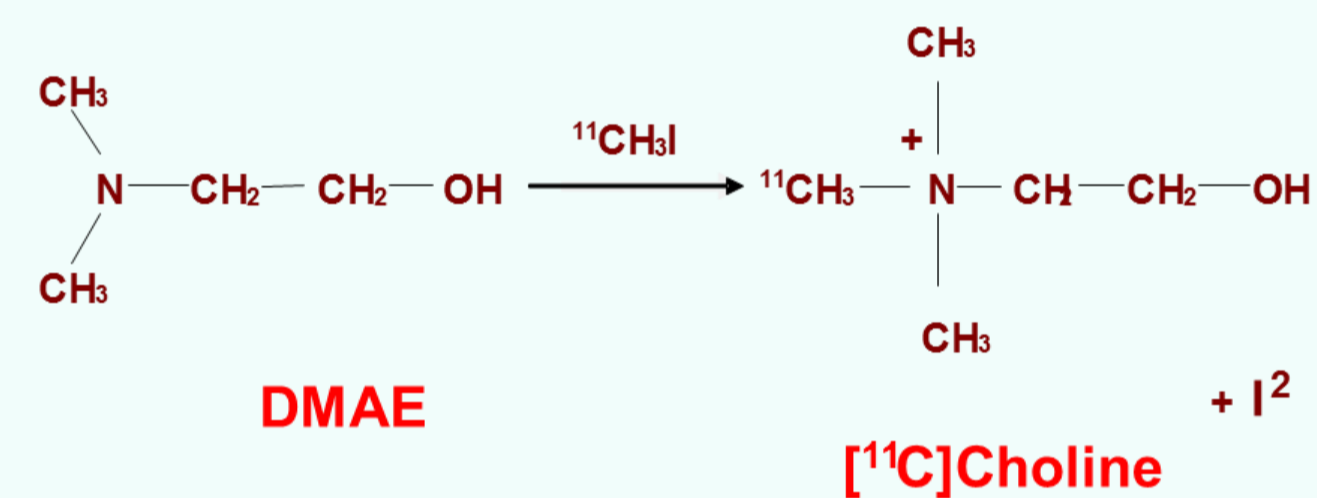


¹¹C is produced by **cyclotron** as [¹¹C]CO₂ or [¹¹C]CH₄.



¹¹C radionuclide, produced as a gas in one of these chemical forms, is being transported through stainless steel tube to the **GMP production laboratory**, where a **hot cell for synthesis** of [¹¹C] Choline and a **hot cell for dispensing** are installed.

Precursor – DMAE (Dimethylaminoethanol)



The University Institute for Positron Emission Tomography in Skopje is equipped with a cyclotron GE PETtrace 800 for production of ¹⁸F, ¹¹C, ¹³N and option for solid targets.



Laboratory for synthesis of **PET radiopharmaceuticals**.



MIP is shielded cell where the **methylator** and the module for carbon labelling **CarbonSynton** are placed in.



BBST-PC Laminar Flow Hot Cell is equipped with **Clio-volumetric dispenser** which is designed to dispense both vials and syringes.

The automatic compact injector system allows automatic intravenous infusion of radiopharmaceuticals in a radiologically safe manner.



The UI PET Skopje is the first center with all these opportunity in the Balkan region which has full equipment for production of [¹¹C] Choline radiopharmaceutical. In our country where improving the health care system is one of the national imperatives, introducing [¹¹C] Choline PET/CT as diagnostic procedure, will contribute to the strategy for better management of patients with prostate malignancy.

