



IBA ANNOUNCES A NEW UNIQUE FEATURE ON ITS CYCLONE® KIUBE FOR NOVEL RADIOISOTOPES PRODUCTION

The IBA Cyclone® KIUBE¹ is a PET cyclotron that produces the widest range of radioisotopes and covers all the needs of PET radiopharmacies.

Coimbra, Portugal, August 27th 2018 - IBA (Ion Beam Applications S.A., EURONEXT), the world's leading provider of solutions for the diagnosis and treatment of cancer, announces a new unique feature on its Cyclone® KIUBE cyclotron, **THE CUSTOM ENERGY²**, that will optimize the production of radioisotopes with high purity.

“With eight exit ports, the Cyclone® KIUBE is the most flexible system, producing the widest range of PET radioisotopes. Today, IBA cyclotron experts are adding even more flexibility, allowing users to define multiple and fixed proton energy at its extraction port(s) automatically and without complex moving parts,” **said Benoit Nactergal, R&D director at IBA Radiopharma Solutions.**

“Some new isotopes such as Gallium-68³ [⁶⁸Ga], Zirconium-89⁴ [⁸⁹Zr], Iodine-123⁵ [¹²³I] require a lower energy irradiation for the highest purity and patient protection,” **said Bruno Scutnaire, President of IBA RadioPharma Solutions.** “For example, it has been demonstrated that optimum energy for the production of ⁶⁸Ga is around 13 MeV for the highest yield and the lowest co-production of impurities.”

Standard fixed-energy cyclotrons require a degrader foil system that limits the current on the target, dissipates heat and modifies the beam size. The IBA-patented **custom energy Cyclone® KIUBE** will allow users to irradiate the target directly at a fixed energy level between 13 and 18 MeV, without using a degrader, while keeping other exit ports at the optimal energy level of 18MeV for ¹⁸F production. This results in more current on the target, and therefore more production at the optimal energy level. Additionally, several consecutive production runs can be performed with different energy levels.

“Cyclone® KIUBE users will obtain higher production of ⁶⁸Ga in a salt-solution target by using a higher proton beam current, since the degrader losses are removed from the system,” **said Samy Bertrand, product manager at IBA radioPharma Solutions,** “They will also reach higher

¹ Patent pending: EP3244707, EP3244708, EP3244709, EP3244710

² Patent pending

³ ⁶⁸Ga is mainly used for prostate cancer imaging. It allows complete evaluation of the local tumor and lymph nodes, visceral and bone metastases with high accuracy in only one examination.

⁴ ⁸⁹Zr labelled antibodies can be used in Immuno-PET imaging as companion diagnostic drug for immunotherapy planning, such as ⁸⁹Zr- trastuzumab which targets HER-2 in breast cancer patients

⁵ ¹²³I has been used for diverse clinical applications such as [¹²³I]NaI for thyroid cancer; [¹²³I]MIBG in cardiology and for neuroblastoma; ¹²³I-FP-CIT for Parkinson disease and others. ¹²³I is the companion diagnostic pair with therapeutic radioisotope ¹³¹I.



production levels of ^{89}Zr by irradiating at higher current and by using the optimal energy level with IBA's high current solid target⁶."

The first Custom Energy Cyclone[®] KIUBE will be installed at the Institute for Nuclear Sciences Applied to Health in Coimbra (ICNAS), Portugal, by the end of the year, as part of a collaborative research project between IBA and the University of Coimbra.

IBA RadioPharma Solutions will be presenting this new feature at the 17th International Workshop on Targetry and Target Chemistry (WTTTC17) hosted by ICNAS from 27-31 August 2018.

ENDS

About ICNAS

The Institute for Nuclear Sciences Applied to Health (ICNAS) is a research unit at the University of Coimbra, Portugal, dedicated to the use of nuclear technology for health applications.

ICNAS is a complete Molecular Imaging facility with the ability to perform pre-clinical and clinical studies with PET and MRI and hosts an IBA Cyclone[®] 18/9 MeV cyclotron and a fully GMP-licensed manufacturing facility.

About the Cyclone[®] KIUBE

Cyclone[®] KIUBE is a fixed-energy cyclotron that accelerates negative ions up to 18 MeV and that host up to two proton sources⁷. Designed to deliver, Cyclone[®] KIUBE offers the highest production capacity ever reached with a PET cyclotron. It is able to produce up to 300 FDG doses in a 2-hour run. Designed for you, Cyclone[®] KIUBE is also available with a self-shielding option⁸. Designed for ever, Cyclone[®] KIUBE is upgradable like no other cyclotron, so you can increase your production capacity. With 8 independent exit ports, it allows to have 8 independent targets. A full range of Nirta[®] targets are available giving you access to ^{18}F , ^{13}N , ^{15}O , ^{11}C , $^{18}\text{F}_2$, ^{68}Ga ,...

The Cyclone[®] KIUBE received the CNSC Class II Prescribed Equipment Certification.

For more info, please visit our [website](#).

About IBA Radiopharma Solutions

Based on longstanding expertise, IBA RadioPharma Solutions supports hospitals and radiopharmaceutical distribution centers with their in-house radioisotopes production by providing them with global solutions, from project design to the operation of their facility. In addition to high-quality technology production equipment, IBA has developed in-depth experience in setting up GMP radiopharmaceuticals production centers

About IBA

⁶ Patent pending

⁷ Patent EP2196073

⁸ Patent pending: EP3250009



IBA (Ion Beam Applications S.A.) is a global medical technology company focused on bringing integrated and innovative solutions for the diagnosis and treatment of cancer. The company is the worldwide technology leader in the field of proton therapy, considered to be the most advanced form of radiation therapy available today. IBA's proton therapy solutions are flexible and adaptable, allowing customers to choose from universal full-scale proton therapy centers as well as compact, single room solutions. In addition, IBA also has a radiation dosimetry business and develops particle accelerators for the medical world and industry. Headquartered in Belgium and employing about 1,500 people worldwide, IBA has installed systems across the world.

IBA is listed on the pan-European stock exchange NYSE EURONEXT (IBA: Reuters IBAB.BR and Bloomberg IBAB.BB). More information can be found at www.iba-worldwide.com

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