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Biography

Abdul Gbaj is presently professor in the School of pharmacy, Tripoli University and Department of Cell Biology, Division of Cellular and Molecular Neurobiology, Salzburg, Austria . In 2008 I was appointed as the general manager of National Medical Centre, Libya until 2011, and in 2003-2006 I have served as a scientific researcher of the Drug Action and Design Group (Manchester university and Astra Zeneca, UK). In the period 1988-1997 I was the general manager of the Central Tripoli pharmacy, ministry of health.

Research and area of expertise

My experience is in both proteins and nucleic acids that are used as targets for lead ligand design, followed by synthesis and evaluation for target inhibition/binding. Also I have experience in protein homology modelling, novel ligand design and synthesis, enzymology, fast reaction techniques, DNA and RNA chemistry and high-field NMR spectroscopy of novel DNA structures and of DNA: ligand complexes. Detection of DNA mutations is one of my specialized area.

Collaborative Research (2008-2017)
My Medicinal Chemistry and biological Evaluation Laboratories have a Collaborative research partnerships with the University of Salzburg (Austria) and the University of Manchester (UK) and I have research partnership agreements between our laboratories for co-authored publications, or multidisciplinary excellence networks in universities point to the peer network mode of today´s knowledge production.

Abdul Gbaj publications

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11) Yoshiaki Hori, Maria C. Rogert, Terumichi Tanaka, Yo Kikuchi, Elena V. Bichenkova, Amanda N. Wilton, Abdul Gbaj, and Kenneth T. Douglas (2005) Porphyrins and porphines bind strongly and specifically to tRNA, precursor tRNA and to M1 RNA and also strongly inhibit the ribonuclease P ribozyme reaction. *Biochim. Biophys. Acta, 1730, 47 – 55.*

12) Virgina A. McNally, Mehdi Rajabi, Abdul Gbaj, Ian J Stratford, Kenneth T. Douglas, Richard Bryce, Sally Freeman & Mohammed Jaffar (2007). Design, synthesis and enzymatic evaluation of 6-alkyl-bridged imadazolyluracil derivatives as inhibitors of human thymidine phosphorylase. *J. Pharm. Pharmacol.*, 59: 1–11.

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53) BRCA1 Mutation Detection Using Fluorescent Hybridization Probes and Melting Curves Safa R. Fitouri1, Nouri B. Ermeli2, Salah M. Bensaber1, 3, Mousa I. Jaeda3, Ibrahim A. Mrema3, Anton Hermann4 and Abdul M. Gbaj1, 2013, Vol. 7, No. 3, pp. 236-243 Journal of Life Sciences, ISSN 1934-7391, USA

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9) Exciplex-based, assembled by nucleic acid target sequences as novel bio-assay systems for molecular diagnostics. Abdul Gbaj, Lindsey Walsh, Laura Etchells, Cande Rogert, Kenneth T. Douglas and Elena V. Bichenkova. *Poster at the Nucleic Acids Forum, a meeting of the Royal Chemical Society, Nucleic Acids Group, 7th July 2006, Manchester interdisciplinary Biocentre, UK.*

10) Exciplex- the next generation on from FRET based DNA detection methods. Lindsey Walsh, Abdul Gbaj, Elena V. Bichenkova. and Kenneth T. Douglas *Talk at the Nucleic Acids Forum, a meeting of the Royal Chemical Society, Nucleic Acids Group, 7th July 2006, Manchester interdisciplinary Biocentre, UK.*

11) A new method based on DNA-assembled exciplexes to detect CYP2C9*3 Alleles. Abdul Gbaj, Lindsey Walsh, Elena V. Bichenkova, and Kenneth T. Douglas. *Poster at the BioScience2006 - bioscience for the 21st century Incorporating the Biochemical Journal Centenary Symposium - Literature, Legacy, Life.....Biochemistry for the 21st Century, 23 - 27 July 2006, Glasgow, Scotland, UK.*

12) Cancer magic bullets? Inhibitors of thymidine phosphorylase and their prodrugs. S. Freeman, R. Bryce, C. Cole, K.T. Douglas, P.N. Edwards, A. Gbaj, M. Jaffar, V.

McNally, M Rajabi, P Reigan, I.J. Stratford..poster at Medicinal Chemistry in the 21st Century conference. 13-14 October, 2006' Faculty of Pharmacy - University of Lisbon, Lisbon, Portugal.

13) SNP Detection for Cytochrome P450 alleles by target-assembled tandem oligonucleotide systems based on exciplexesAbdul Gbaj, Lindsey Walsh, Laura Etchells, Elena V. Bichenkova, and Kenneth T. Douglas. Poster at Structural Biology workshop for Non-structural biologists, (2006) Tuesday 28th November in Michael Smith Lounge and Seminar Room, Manchester University, Manchester, UK.

14) A novel technology to detect CYP2C9*3 Alleles based on DNA-assembled exciplexes. Abdul Gbaj, Lindsey Walsh, Elena V. Bichenkova, Laura L. Etchells and Kenneth T. Douglas. Poster at Life Sciences (the first joint meeting of the Biochemical Society, the British Pharmacological Society and The Physiological Society), July 2007 at the SECC, Glasgow, Scotland, UK.

15) Novel Scorpion Probes for Nucleic Acid Sequences Based on Target-assembled Exciplexes. Abdul Gbaj, Lindsey Walsh, Candelaria Rogert, Alireza Sardarian, Elena V. Bichenkova, Laura L. Etchells, David Whitcombe and Kenneth T. Douglas. Poster at Life Sciences (the first joint meeting of the Biochemical Society, the British Pharmacological Society and The Physiological Society), July 2007 at the SECC, Glasgow, Scotland, UK.

Abdul Gbaj discovers the following discoveries

1-The first spectrophotometric 96-well plates assay for thymidine phosphorylase.

2- The first tight-binding stoichiometric inhibitors of recombinant *E. coli* thymidine phosphorylase.

3-The first exciplex fluorescence technique to be applied to target sequences that are embedded in realistic DNA fragments.

4- The first use of an exciplex-based split-probe system to detect wild type (WT) and *3 SNP alleles of human CYP 2C9.

5-The first diagnostic agent for carbonic anhydrase II related tumours.

6- The first exciplexes and excimers of 2-phenylalkynyl-pyrene for target-assembled DNA-mounted exciplexes in-situ detection of nucleic acids in visible rang.

7-.The first exciplex fluorescence in Scorpion DNA.
8-Enegy transfer and oligonucleotide mutation detection as a new tool (registration phase)
9-New drug as a antitumour and strong analgesic (filing phase)