

Biosensors

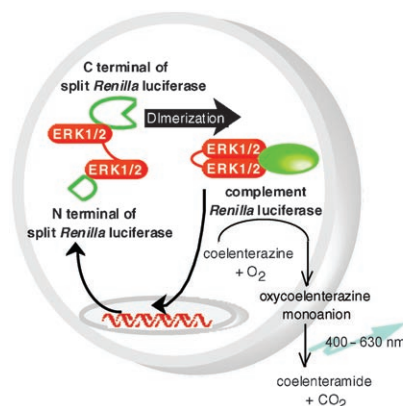
A. Kaihara, Y. Umezawa*

Genetically Encoded Bioluminescent Indicator for ERK2 Dimer in Living Cells

Chem. Asian J.

DOI: 10.1002/asia.200700186

A pair of lights: The detection of dimers of extracellular signal-regulated kinase 2 (ERK2) is made possible by a bioluminescent indicator developed with the split *Renilla* luciferase complementation method. External stimuli induce the formation of ERK2 dimer in living cells, which then produces spontaneous emission of bioluminescence that is detected by this indicator.



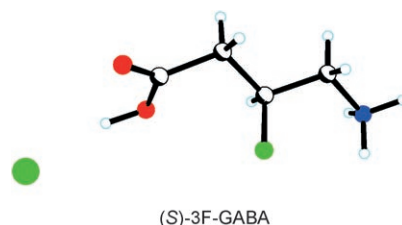
GABA Analogue

G. Deniau, A. M. Z. Slawin, T. Lebl, F. Chorki, J. P. Issberger, T. van Mourik, J. M. Heygate, J. J. Lambert, L.-A. Etherington, K. T. Sillar, D. O'Hagan*

Synthesis, Conformation and Biological Evaluation of the Enantiomers of 3-Fluoro- γ -Aminobutyric Acid ((*R*)- and (*S*)-3F-GABA): An Analogue of the Neurotransmitter GABA

ChemBioChem

DOI: 10.1002/cbic.200700371



Fluorine on the brain. The enantiomers of 3-fluoro- γ -aminobutyric acid (3F-GABA) have been prepared and explored in a preliminary evaluation as GABA_A agonists of cloned receptors and in a whole animal model. The favoured *gauche* rather than *anti* relationships between the C–F and C–NH₃⁺ bonds in these molecules allow enantiomeric conformations to be assumed that have the potential to delineate the binding modes of GABA to target receptors.

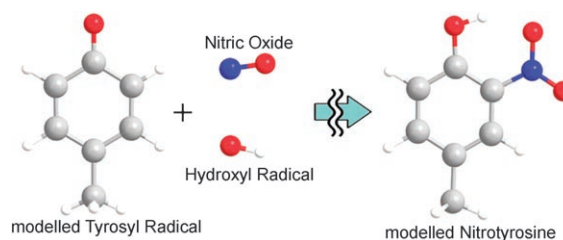
Radical Mechanism

K. D. Papavasileiou, T. D. Tzima, Y. Sanakis,* V. S. Melissas*

A DFT Study of the Nitric Oxide and Tyrosyl Radical Interaction: A Proposed Radical Mechanism

ChemPhysChem

DOI: 10.1002/cphc.200700434



Radicals at work: A new pathway for the nitration of tyrosine in aqueous medium is proposed (see figure). Tyrosyl radicals play an essential role in catalytic reactions of numerous enzymes and react

with nitric oxide through a sequence of non-ionic water catalyzed and biologically feasible intermediate reactions, yielding nitrotyrosine.

Cationic nucleotides consisting of lysine tethered by a 2'-O-aminoethyl linker to uridine incorporated into siRNA increase target affinity and can be used in functional oligonucleotides for effective gene silencing in vitro. In DNA-based antisense oligonucleotides, affinity to the RNA complement was decreased, but the in vitro activity increased with a greater number of modifications.



Gene Silencing

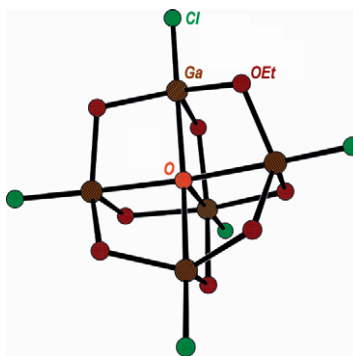
J. Winkler, M. Gilbert, A. Kocourková, M. Stessl, C. R. Noe*

2'-O-Lysylaminoethyl Oligonucleotides: Modifications for Antisense and siRNA

ChemMedChem

DOI: 10.1002/cmdc.200700169

Metathesis of solid GaCl_3 with NaOEt /EtOH provided oxoalkoxide chloride complexes of gallium. Residues that were redissolved in either toluene/MeCN or toluene/pyridine gave after storage $\text{Ga}_5(\mu_5\text{-O})(\mu\text{-OEt})_8\text{Cl}_5$ (**1**) or $[\text{Ga}_{12}(\mu_4\text{-O})_2(\mu_3\text{-O})_5(\mu\text{-OEt})_{10}\text{Cl}_{12}\text{Py}_4]\text{Py}$ (**2**), respectively, both at room temperature and in relatively high yields.



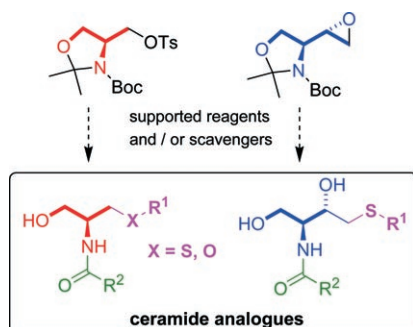
Oligonuclear Gallium Compounds

E. V. Suslova, V. G. Kessler,* S. Gohil, N. Y. Turova

Oxoethoxide Chlorides – Representatives of Oligonuclear Alkoxide Complexes of Gallium: Penta- and Dodecanuclear Molecules

Eur. J. Inorg. Chem.

DOI: 10.1002/ejic.200700635



A simple solution-phase protocol for the synthesis of ceramide analogues from enantiopure scaffolds is disclosed. Nucleophilic thiolates or phenoxides and appropriate supported reagents or scavengers are used to give the target compounds in good overall yields. The method is adaptable to combinatorial protocols for the generation of small-to-medium-sized libraries.

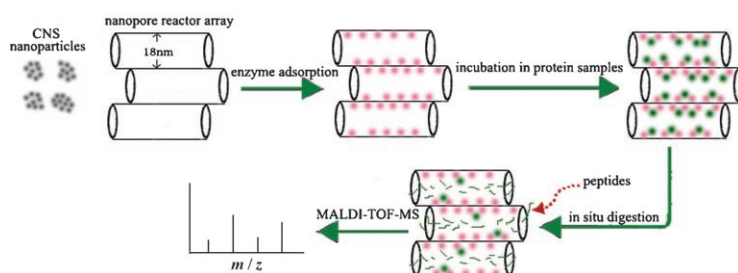
Ceramide Analogues

S. Grijalvo, X. Matabosch, A. Llebaria, A. Delgado*

A Straightforward Protocol for the Solution-Phase Parallel Synthesis of Ceramide Analogues

Eur. J. Org. Chem.

DOI: 10.1002/ejoc.200700814



Prot(e)o-types: Mesoporous silicates with cyano functional groups for accommodating trypsin have been proposed as

a nanopore-based bioreactor to favor highly efficient protein digestion inside the mesochannels (see graphic).

Proteomics

L. Qiao, Y. Liu, S. P. Hudson, P. Yang, E. Magner, B. Liu*

A Nanoporous Reactor for Efficient Proteolysis

Chem. Eur. J.

DOI: 10.1002/chem.200701102



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