

Chiron AS – The Biomarker Expert!



Chiron AS, located in Trondheim, Norway, provides the scientific community worldwide with sophisticated solutions for difficult chemical analysis.

Our reference standards are used in complex chemical, toxicological, and bioorganic analysis. Since 1983 we have supplied standards of high purity for petroleum, geochemical, and environmental analysis, as well as chiral compounds and other fine chemicals of pharmaceutical interest.

High focus on basic research applied to environmental and petroleum problems has brought Chiron to the forefront of analytical chemistry. This is a result of many years of investments, the enthusiasm and pioneer spirit of our team, and a close cooperation with academic institutions and customers worldwide.

Areas of application

- Environmental analysis
- Pharmaceuticals and forensic (narcotic) substances
- Food safety, including analysis of food toxins and contaminants
- Petroleum and geochemical analysis
- Toxicology

We offer

- State-of-the-art **reference standards**. On the Chiron web site you can find nearly 10 000 unique products, please inquire if you do not find what you are looking for.
- Custom synthesis from microgram to kilogram scale.
- Isolation and purification of standards – supplied with full analytical documentation and purified to a high purity for toxicological studies.
- **Project partnership**
Chiron is currently involved in several EU projects and project applications. Sophisticated chemicals and reference materials are required for many projects and Chiron offer chemical know-how as partner in future projects where preparations of new substances are required.

Contact us for further discussion regarding possible partnering!

Key product areas

Biomarkers and metabolics

Chiron has been the Biomarker Expert for more than 25 years and we are still at the front of the development of this scientific area. We offer a varied, flexible and innovative range of biomarkers and reference standards to suit the needs of the individual customer.

Biomarkers can be complex "molecular fossils" derived from once living organisms, or they can be markers of diseases and exposure to chemicals. Since the beginning, Chiron has been involved in the preparation of steroid and triterpanoid (hopane) biomarkers used in the petroleum industry. These compounds are found in petroleum and sediments, and hopanes are in fact the second largest group of natural product on Earth – surpassed only by cellulose.

This type of biomarkers changes their chemical structure over time and maturation. They have traditionally been used in petroleum exploration, but have lately been increasingly used for forensic analysis in the investigation of oil spill – like the catastrophe now happening in the Gulf of Mexico.

The metabolic pathway of organic compounds often passes via primary metabolites like hydroxylated compounds, and then further into more complicated glucuronides and sulfates. These compounds can often be associated with certain diseases and can be used to monitor the exposure to environmental pollutants - a constantly growing concern as more and more is known about the harmful effect of our past and present everyday products. Chiron offers both the metabolites and the parent compound for a large range of products!

Genotoxic compounds

Chiron has recently finished a COMICS project where several new and highly genotoxic compounds for COMET ASSAY analysis were developed. Please see additional information on page 3 and 4. Furthermore, we offer custom purification and synthesis of this class of compounds on request.

Environmental standards

Over the last 100 years, the environment has become more and more contaminated as a result of human activity. As more and more is known about the threats from different chemicals, the need for control and analysis of these increases. Chiron offers highly purified products for the surveillance of products of concern. Among others, we offer standards for PCBs, different flame retardants, monofluorinated compounds and different surfactants, included perfluorinated products. We also have the largest selection of PAHs on the market – a group of products that are known to be carcinogenic. Our products can be used as analytical standards as well as for toxicology studies.

Standards for food safety analysis

Food safety is also a growing concern that affects everybody. Many organisms produce natural toxins, like mycotoxins, different plant toxins and algae toxins. Many of these are amongst the most toxic compounds known to mankind, and they might be found in foodstuff. Chiron offers food toxins for routine control as well as purified toxins for scientific investigations.

Another concern is the potential pollution of food as a result of human activity. We offer a wide range of analytical standards with this in mind – like pesticides, contaminants from food packaging and processing amongst others.

Becoming a Customer

Our customers for analytical standards are found worldwide. They span several business areas and are of all sizes; from pharmaceutical and petroleum giants to small analytical labs, hospitals, universities and research facilities, privately held companies and state owned institutions like NIST, EPA, Environment Canada, CDC (Centers for Disease Control and Prevention, USA), NASA, and many others.

If you would like to become one of our valued customers, or you would like to learn more about what we can offer, please do not hesitate to contact us. Our scientifically trained staff in Trondheim is waiting to help you!

We also have a network of distributors around the world to make your contact with Chiron even easier. All international distributors have been officially appointed by Chiron and they will assist you in finding the Chiron products that are just right for your specific need.

Biomarker Focus 45: NEW!

THE COMICS PROJECT:

STANDARDS FOR COMET ASSAY ANALYSIS

Our mission in the COMICS-project was to design and synthesize chemical agents that could induce reproducible amounts of damage in DNA. Several candidates were synthesized and tested for activity in the COMET ASSAY method. In addition other genotoxic compounds were purified to analytical Comet Assay grade.

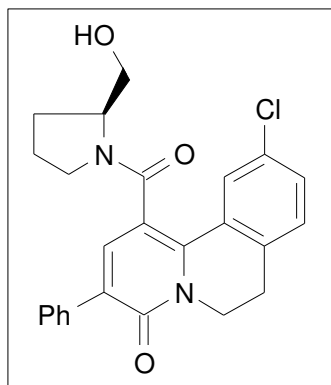
During this project Chiron synthesized 5 specific final compounds, see below for details. Compound 8504.23 showed a remarkable photogenotoxic activity of 10x that of compound 8503.23 (similar to the Roche-compound Ro 19-8022). The activity of 8503.23, (Ro19-8022) and its (S)-isomer 8502.23 were of similar activity, while the two compounds 8500.23 and 8501.23 had no activity.

Standardized DMSO-solutions of these compounds are now available from Chiron:

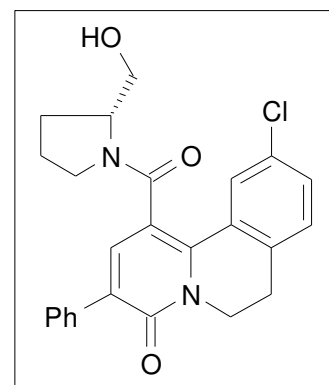
0,1 mM in DMSO, 1x1mL, 5x1mL or 10x1mL
 1,0 mM in DMSO, 1x1mL, 5x1mL or 10x1mL
 2,5 mM in DMSO, 1x1mL, 5x1mL or 10x1mL



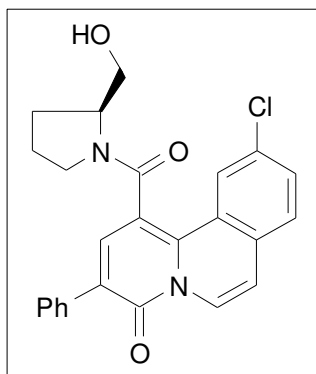
Comet Assay Standards synthesized by Chiron AS



8500.23
 (S)-1-[(10-Chloro-6,7-dihydro-4-oxo-3-phenyl-4H-benzo(a)quinilizin-1-yl] carbonyl-2-pyrrolidinemethanol

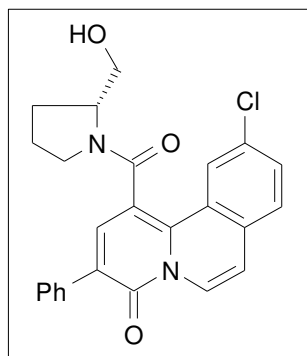


8501.23
 (R)-1-[(10-Chloro-6,7-dihydro-4-oxo-3-phenyl-4H-benzo(a)quinilizin-1-yl] carbonyl-2-pyrrolidinemethanol

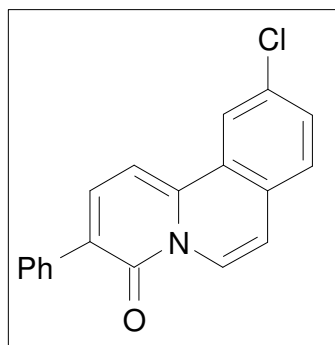


8502.23
 (S)-1-[(10-Chloro-4-oxo-3-phenyl-4H-benzo(a)quinilizin-1-yl] carbonyl-2-pyrrolidinemethanol





8503.23
(R)-1-[(10-Chloro-4-oxo-3-phenyl-4H
-benzo(a)quinolizin-1-yl]carbonyl-2-
pyrrolidinemethanol
Ro 19-8022



8504.23
10-Chloro-3-phenyl-4H-benzo(a)
quinolizin-4-one

Other Comet Assay grade standards now available from Chiron:

8490.2	Methylsulfoxide, Comet assay grade
8491.22	Colchicine, Comet assay grade
8492.29	Etoposide, Comet assay grade
8493.2	Methyl methanesulfonate, Comet assay grade
8494.0	Potassium bromate, Comet assay grade
8559.15	2-Acetamidofluorene, Comet assay grade
8560.9	4-Nitroquinoline-N-oxide, Comet assay grade
8561.7	Cyclophosphamide monohydrate, Comet assay grade
8562.34	Triton X-100, Comet assay grade
8563.6	D-Mannitol, Comet assay grade
8564.10	tert-Butylhydroquinone, Comet assay grade
8565.3	tert-Butanol, Comet assay grade
8566.0	Hydrogen peroxide, 35Wt%, Comet assay grade
8567.20	7,12-Dimethylbenz[a]anthracene, Comet assay grade
8568.20	Benzo[a]pyrene, Comet assay grade
8569.16	Ampicillin trihydrate, Comet assay grade
8924.110	Bleomycin sulphate, Comet assay grade
8925.15	Mitomycin C, Comet assay grade
8926.2	N-Nitroso-N-methylurea, Comet assay grade

Available as neat or in DMSO solutions:

0.1 mM in DMSO, 1x1mL, 5x1mL or 10x1mL
 mM in DMSO, 1x1mL, 5x1mL or 10x1mL
 2,5 mM in DMSO, 1x1mL, 5x1mL or 10x1mL

