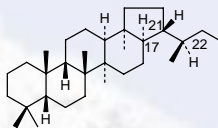


Biomarker Focus

Homohopanes

Occurrence and origin:

C31 to C35 homohopane isomers are common constituents of **sedimentary matter**. The origin of the homohopanes is the most abundant hopanoid in prokaryotes, C35 tetrahydroxybacteriohopane.



2339,31
 $\alpha\beta$ 31 22R (C31 $\alpha\beta$ 22R)

Geochemical relevance and use in oil spill analysis

Homohopanes play an important role in **geochemical investigations**,¹ and are diagnostic biomarker indicators useful in **oil spill analysis**^{2,3} and **oil waste analysis**.

Methods of Analysis

There are **8 possible isomers** of each homohopane C31 to C35. The **natural isomers $\beta\beta$** (17 β (H),21 β (H)) may be **found in recent sediments**. However, the **$\alpha\beta$ -isomers** are always the **dominant in mature sediments**, while smaller amounts of $\beta\alpha$ - and $\alpha\alpha$ -isomers are present as minor constituents.

The homohopanes elute as **pairs of 22S- (elutes normally first) and 22R-isomers**, except the $\beta\alpha$ -C31 where the 22S- and 22R-isomers coelute⁵. Gammacerane and some other minor hopanoids elutes in the region **between the C31 22R and C32 22S isomers**.

Chiron offers

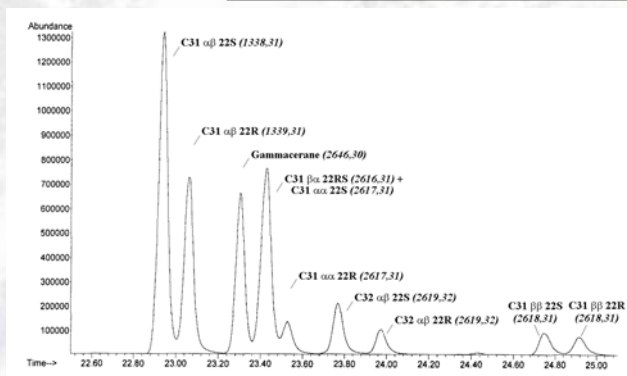


Figure 1: GC-MS of a mixture of the synthetic C31 homohopane isomers spiked with gammacerane and C32 $\alpha\beta$ bishomohopane⁵

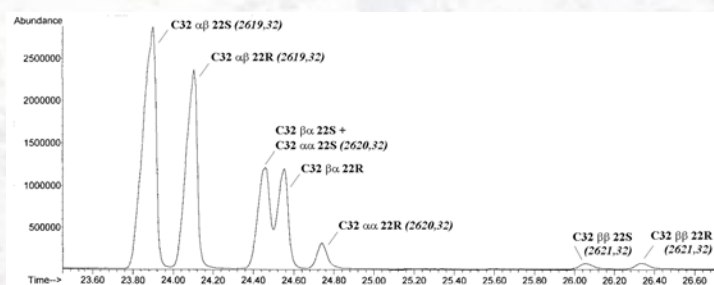


Figure 2: GC-MS of a synthetic C32 bishomohopane isomer mixture (Cat No. 2350,32)⁵

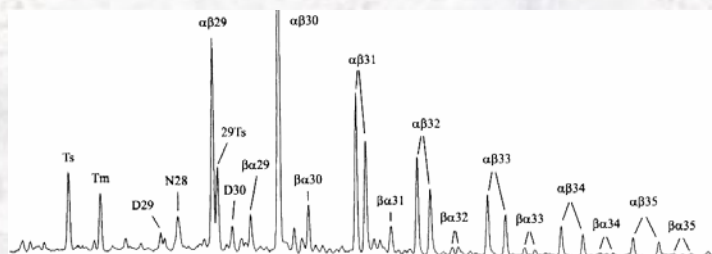
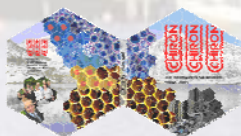


Figure 3: GC-MS of Mona-2 Oil, Danish North Sea (Courtesy of Peter Nytoft, GEUS, Denmark)

**Inquire for
a free
catalogue**



Tel +47 73 87 44 90
Fax +47 73 87 44 99
chiron@chiron.no
www.chiron.no

References:

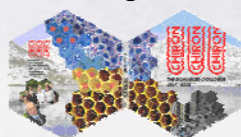
1. Peters, Walters and Moldowan, *The Biomarker Guide*, Cambridge University Press, Cambridge, 2005
2. Daling, Faksness, Hansen, and Stout, *Environmental Forensics*, 2002; 3, 263
cf: <http://www.nordicinnovation.net/nordtestfiler/tec498.pdf>
3. Wang and Fingas, *Marine Pollution Bulletin*, 2003; 47, 423, and references therein
4. Nytoft and Bojesen-Koefoed, *Organic Geochemistry*, 2001; 32, 841

Hopanes/Triterpanes available from Chiron:

1339,31	17 α (H),21 β (H)-22R-Homohopane	50 μ g
1338,31	17 α (H),21 β (H)-22S-Homohopane	50 μ g
2255,31	17 α (H),21 β (H)-22RS-Homohopane	50 μ g
2616,31	17 β (H),21 α (H)-22RS-Homohopane	10 μ g
2617,31	17 α (H),21 α (H)-22RS-Homohopane	10 μ g
2618,31	17 β (H),21 β (H)-22RS-Homohopane	10 μ g
2619,32	17 α (H),21 β (H)-22RS-Bishomohopane	10 μ g
2620,32	17 α (H),21 α (H)-22RS-Bishomohopane	10 μ g
2621,32	17 β (H),21 β (H)-22RS-Bishomohopane	10 μ g
2350,32	Bishomohopane (Isomer mix with 17 α (H),21 β (H)-22RS as main compounds)	100 μ g
2622,33	17 α (H),21 β (H)-22RS-Trishomohopane	10 μ g
2623,33	17 α (H),21 α (H)-22RS-Trishomohopane	10 μ g
2624,33	17 β (H),21 β (H)-22RS-Trishomohopane	10 μ g
2625,34	17 α (H),21 β (H)-22RS-Tetrakishomohopane	10 μ g
2688,34	17 α (H),21 β (H)-22S-Tetrakishomohopane	10 μ g
2689,34	17 α (H),21 β (H)-22R-Tetrakishomohopane	10 μ g
2690,34	17 β (H),21 α (H)-22S-Tetrakishomohopane	5 μ g
2691,34	17 β (H),21 α (H)-22R-Tetrakishomohopane	10 μ g
2628,35	17 α (H),21 β (H)-22RS-Pentakishomohopane	10 μ g
2629,35	17 β (H),21 α (H)-22RS-Pentakishomohopane	10 μ g
0615,27	Tm (22,29,30)-Trisnor-17 α (H)-hopane	100 μ g
0614,29	17 β (H),21 α (H)-30-Norhopane (isoadiantane)	100 μ g
1321,29	17 α (H),21 β (H)-30-Norhopane	50 μ g
1367,29	17 α (H),21 α (H)-30-Norhopane	50 μ g
0689,29	17 β (H)-28-Norlupane	100 μ g
0690,29	17 α (H)/17 β (H)-28-Norlupane	100 μ g
0613,30	17 β (H),21 β (H)-Hopane (hopane)	100 μ g
0612,30	17 β (H),21 α (H)-Hopane (moretane)	100 μ g
0132,30	17 α (H),21 β (H)-Hopane	100 μ g
2179,30	17 α (H),21 α (H)-30-Nor-29-methylhopane	50 μ g
2262,30	17 α (H),21 β (H)-30-Nor-29-methylhopane	50 μ g
2646,30	Gammacerane	10 μ g
0617,30	18 α (H)-Oleanane	100 μ g
0618,30	18 β (H)-Oleanane	100 μ g
0619,30	Friedelane	100 μ g
0616,30	Lupane	100 μ g
0620,30	Onocerane I	100 μ g
0621,30	Onocerane II	100 μ g
1192,30	20R/20S-Dammarane	100 μ g

- 10 μ g quantities are supplied neat in convenient 300 μ L micro GC-vials for dilution to 50-100 μ g/mL
- 50 and 100 μ g quantities are supplied in isoctane (1mL vials)
- The quantities are measured relative to the intensity (TIC) of $\alpha\beta$ 30 hopane or by gravimetry

Inquire for
a free
catalogue



25,28,30-Trinorhopanes
28,30-Bisnorhopanes
Ts
25-Norhopane

Soon available