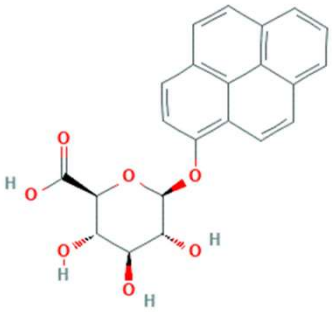
Case Study:

Positive read small molecule assay: HOP-G

Detecting: HOP-G



Hydroxypyrene glucuronide (HOP-G) is a urinary secretion and a bio marker for pyrene. Pyrene is a polycyclic aromatic hydrocarbon (PAH) commonly formed during the incomplete combustion of organic matter. Pyrene metabolises in the body to form 1-hydroxypyrene (1-HOP) and subsequently HOP-G. The Pyrene prototype benzo[a]pyrene, is classified as a carcinogen by the International Agency for Research on Cancer (IARC). Other adverse respiratory and dermatological health impacts have also been observed.

Pyrene may be present in relatively high concentrations in certain working environments, so detecting high levels of HOP-G may help employers to identify 'at risk' personnel.

Issue: HOP-G has a small molecular structure. Small molecule assays usually produce a positive test outcome with a faint or negative read (no test line = positive test). To a user, this is counter-intuitive and can lead to misinterpreted results.

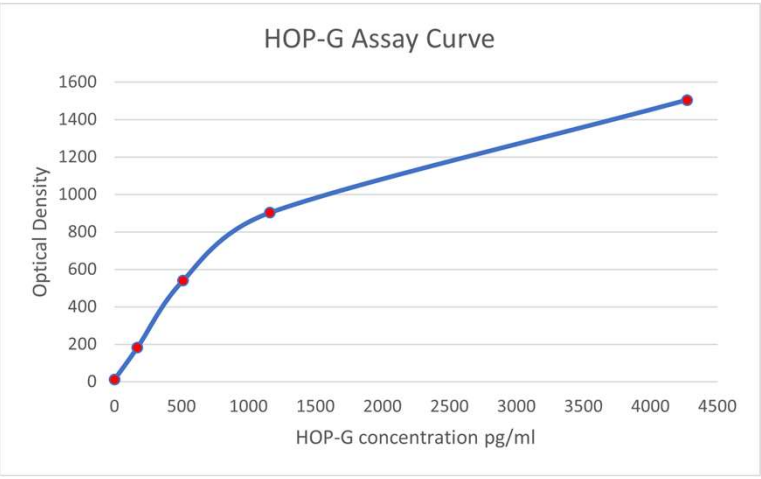
Objective: Produce an accurate and convenient positive read assay to detect raised levels of HOP-G.

Sample: Urine

Result: Using our techniques and chemistry, we were able to show a clear positive read at low HOP-G concentrations and visibly stronger results with higher concentration levels.

Even without an optical density reader, the lateral flow test would clearly indicate exposure to pyrene.

With an optical density reader, it would also be possible to indicate the level of pyrene that the present in the person being tested.



Applications: Occupational health services, work environments, medical practices

For more information about this and other case studies, please contact
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