

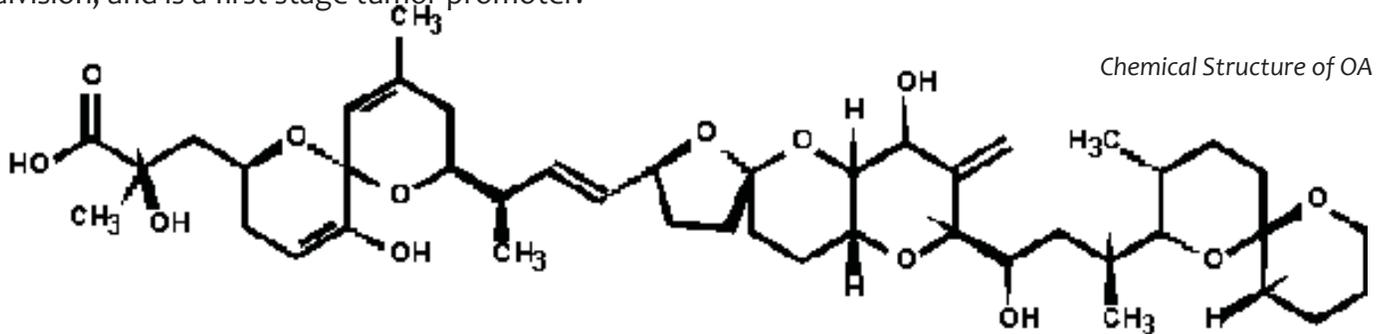


### Species Distribution:

*Dinophysis* species are dinoflagellates that produce the toxin okadaic acid and dinophysis toxins. These species are generally found worldwide, including populations in North America and along the northeast coast of the United States and the Gulf of Mexico.

### Toxins/Mode of Action: Okadaic Acid and Dinophysis toxins [1-4]

The primary toxin produced is a lipophilic toxin called okadaic acid (OA). Okadaic Acid is a potent inhibitor of protein phosphatase 2A, an integral part of metabolism membrane transport, secretion, and cell division, and is a first stage tumor promoter.



### Human Health Syndrome: Diarrhetic Shellfish Poisoning (DSP)

Diarrhetic shellfish poisoning (DSP) is a gastrointestinal illness without neurological effects that has been reported worldwide. DSP symptoms usually occur within 30 minutes to a few hours after consumption of contaminated shellfish. Symptoms include diarrhea, nausea, vomiting, and abdominal pain. Long-term exposure may promote tumor growth in the digestive system. There have been no fatal cases of DSP reported and a full recovery is expected within 3 days, regardless of medical treatment.

### Species Associated With DSP:

- *Dinophysis acuminata*
- *Dinophysis caudata*
- *Dinophysis fortii*
- *Prorocentrum lima*
- *Dinophysis norvegica*
- *Dinophysis rotunda*
- *Dinophysis sacculus*

### Syndrome Distribution:

The first reported case of DSP occurred in the 1960's in the Netherlands, followed by reports in Japan, Europe, South America, the Far East, France, Chile, Spain, and Scandinavia (particularly within the Denmark region). Though various species of *Dinophysis* have been found in waters off the US coast there have been no confirmed cases of DSP to date. Okadaic acid and related toxins produced by *Dinophysis* spp. has been found along the Texas Gulf coast and the Chesapeake Bay.

