Ciguatera Fish Poisoning in Vietnam

Dao Viet Ha, Pham Xuan Ky

Institute of Oceanography
01 Cau Da, Nha Trang, Viet Nam
Tel: 084.58.3590218
Contents

- Research for marine toxins
- Ciguatera fish poisoning in Vietnam in recent years
Research for marine toxins

- From 1997: ASP, DSP, PSP in Bivalves
- 1997-2010: TTX, PSP in Puffer, Horseshoe crab, Crab, Blue-ringned octopus, Goby fish, Conus
- From 1999: Ciguatera in Fish
- 2000: harmful planktons, including toxic species
Ciguatera research
Nha Trang

1999-2001: investigated ciguatera in several fish species

**Mouse test** *(Lewis and Sellin, 1993- AOAC, 1995)*

- 20mg ether extract in 1mL of Tween 80
- Mouse weight: ~ 20g
- Observation: 96 hours
• The extract of Barracuda caused mice dead in 24h

• *Gambierdiscus toxicus, G. polynesiensis* were found in Nha Trang Bay ([Larsen and Nguyen, 2004; The et al. 2010](#))
Quang Ngai, Ninh Thuan - Binh Thuan

Snapper poisonings, CFP?
• May-June 2008, Ninh Thuan and Binh Thuan: 97 patients

• April 2009, Binh Thuan: ~ 10 patients

• May 2013, Binh Thuan: 09 patients

• Sept. 2013, Binh Thuan: 11 patients

• August 2010, Quang Ngai: 5 patients

(Source: Local medical centers)
The symptoms in the victims: nausea and vomiting, diarrhea, muscle pain, dizziness with low blood pressure
In Ninh Thuan - Binh Thuan

- The ether extracts of snapper samples in 2008, 2009 caused mice dead in 6h,

- \textit{G. toxicus, G. pacificus, G. spp} were found in several areas of Ninh Thuan-Binh Thuan (Larsen and Nguyen, 2004; The el al. 2010)
- *Gambierdiscus toxicus* and *G. pacificus* from Ninh Thuan and Binh Thuan produce PCTXs (Roeder et al. 2010; The et al. 2010)
In Quang Ngai

- *Gambierdiscus pacificus* was found
  (Thuoc and Huyen, 2004)
**Type of Analysis Requested:** LC-MS/MS analysis for Ciguatera toxins

**Reason for analysis:** Eleven suspected Ciguatera Food Poisoning outbreaks.

**Sample Information**

<table>
<thead>
<tr>
<th>Sample</th>
<th>Reference</th>
<th>Geographic collection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fish</td>
<td>MB-237-12*</td>
<td>No reference</td>
</tr>
<tr>
<td>Fish</td>
<td>MB-238-12</td>
<td>No reference</td>
</tr>
<tr>
<td>Fish</td>
<td>MB-239-12</td>
<td>No reference</td>
</tr>
<tr>
<td>Fish</td>
<td>MB-240-12</td>
<td>Atlantic Ocean</td>
</tr>
<tr>
<td>Fish</td>
<td>MB-241-12*</td>
<td>Atlantic Ocean</td>
</tr>
<tr>
<td>Fish</td>
<td>MB-242-12*</td>
<td>Vietnam</td>
</tr>
<tr>
<td>Fish</td>
<td>MB-243-12*</td>
<td>India</td>
</tr>
<tr>
<td>Fish</td>
<td>MB-244-12*</td>
<td>Vietnam</td>
</tr>
<tr>
<td>Fish</td>
<td>MB-245-12*</td>
<td>India</td>
</tr>
<tr>
<td>Fish</td>
<td>MB-246-12*</td>
<td>India</td>
</tr>
<tr>
<td>Fish</td>
<td>MB-247-12</td>
<td>Sri Lanka</td>
</tr>
</tbody>
</table>

*Positive for CTX1B*
In SUMMARY

- There are the causatives for ciguatoxins in Vietnam

And

- Snapper poisoning cases reported recently could be due to ciguatoxin contamination.
Thank you for your attention!