

# Ricin Toxin

## Source:

- **Plant:** *Ricinus communis*, Castor beans

## Pathogenesis:

- **B-chain** binds to carbohydrate receptors on the cell wall and allows toxin complex to enter the cell
- **A-chain** inactivates ribosomes and halts protein synthesis

## Symptoms:

- 6 - 18 hrs post exposure
- Fever, cough, chest tightness, dyspnea, cyanosis, gastroenteritis and necrosis; death in ~ 72 hrs

## Toxicity: (route dependent):

- Low oral toxicity due to poor absorption and enzymatic digestion in the GI tract
- Low dermal toxicity unless mixed with a strong solvent
- High inhalation toxicity resulting in severe necrosis and pneumonia
- High injection toxicity resulting in necrosis



**Detection:**

- Metabolized quickly in the body - usually within 24 hrs (70% excreted in urine)

**Environmental Specimens:** (toxin detection)

- Food
- Drinks
- Soil
- Water
- Powder
- Swabs



**Clinical Specimens:** (antibody detection)

- Not indicated unless a known exposure has occurred
- Serum (acute and convalescent - 2 weeks apart) testing is performed at the CDC
- CDC is not accepting clinical samples unless requested by the FBI

**Environmental and Specimen Collection:**

- Collect specimens in plastic containers - do not use glass!
- Store specimens at room temperature or refrigerate
- NEVER freeze or heat samples suspected of containing ricin toxin, as this will denature the toxin



**Refer to State Laboratory  
610-280-3464**