

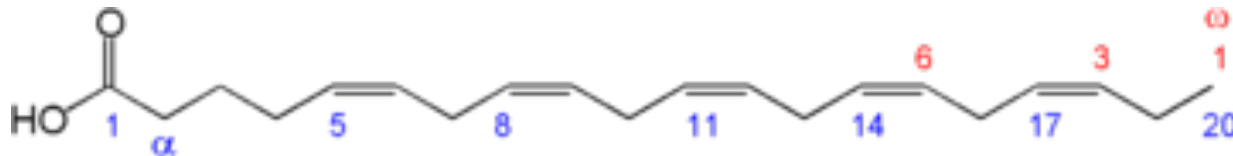
# DHA and EPA purification and production by preparative HPLC



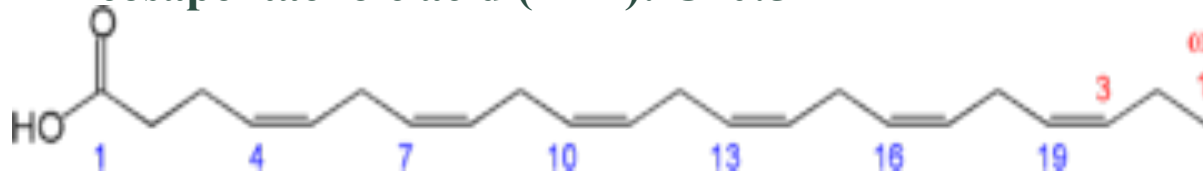
# Application Case -----EPA&DHA

## About EPA&DHA

- ❖ For pharmaceutical applications are made from fish oil
- ❖ Products: Omacor®/Lovaza™/Epanova®



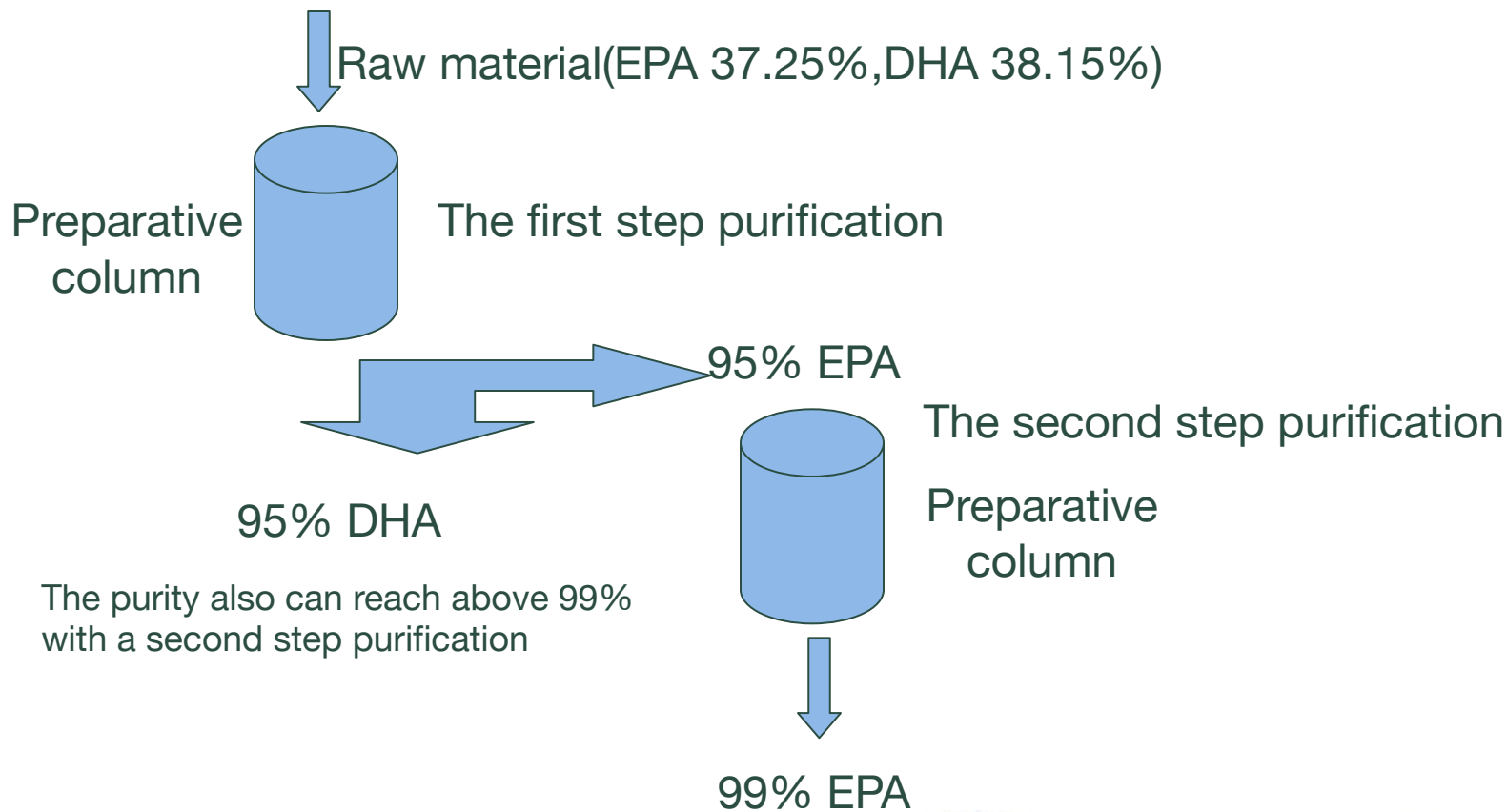
**Eicosapentaenoic acid (EPA): C20:5**



**Docosahexaenoic acid (DHA): C22:6**

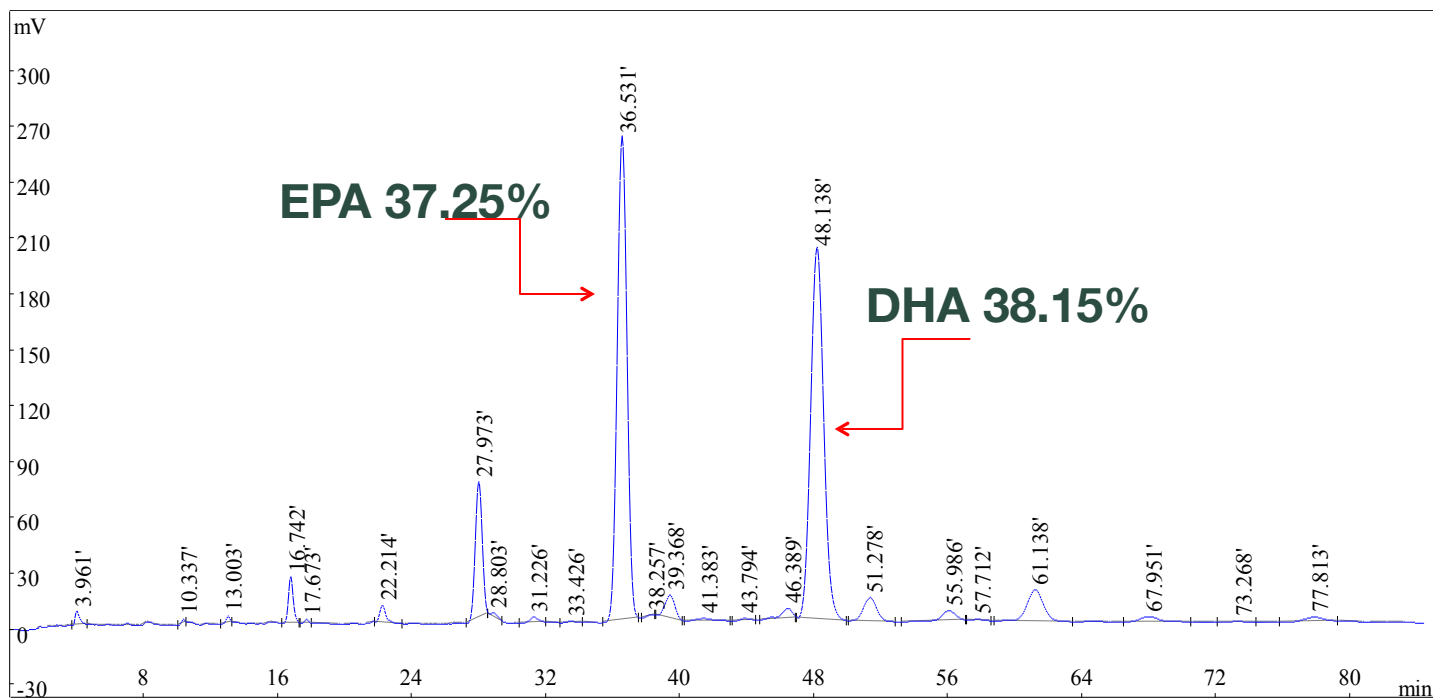
# Application Case -----EPA&DHA

## Sequential purification of fatty acid stream:



# Application Case -----EPA&DHA

## The analytical result of raw material



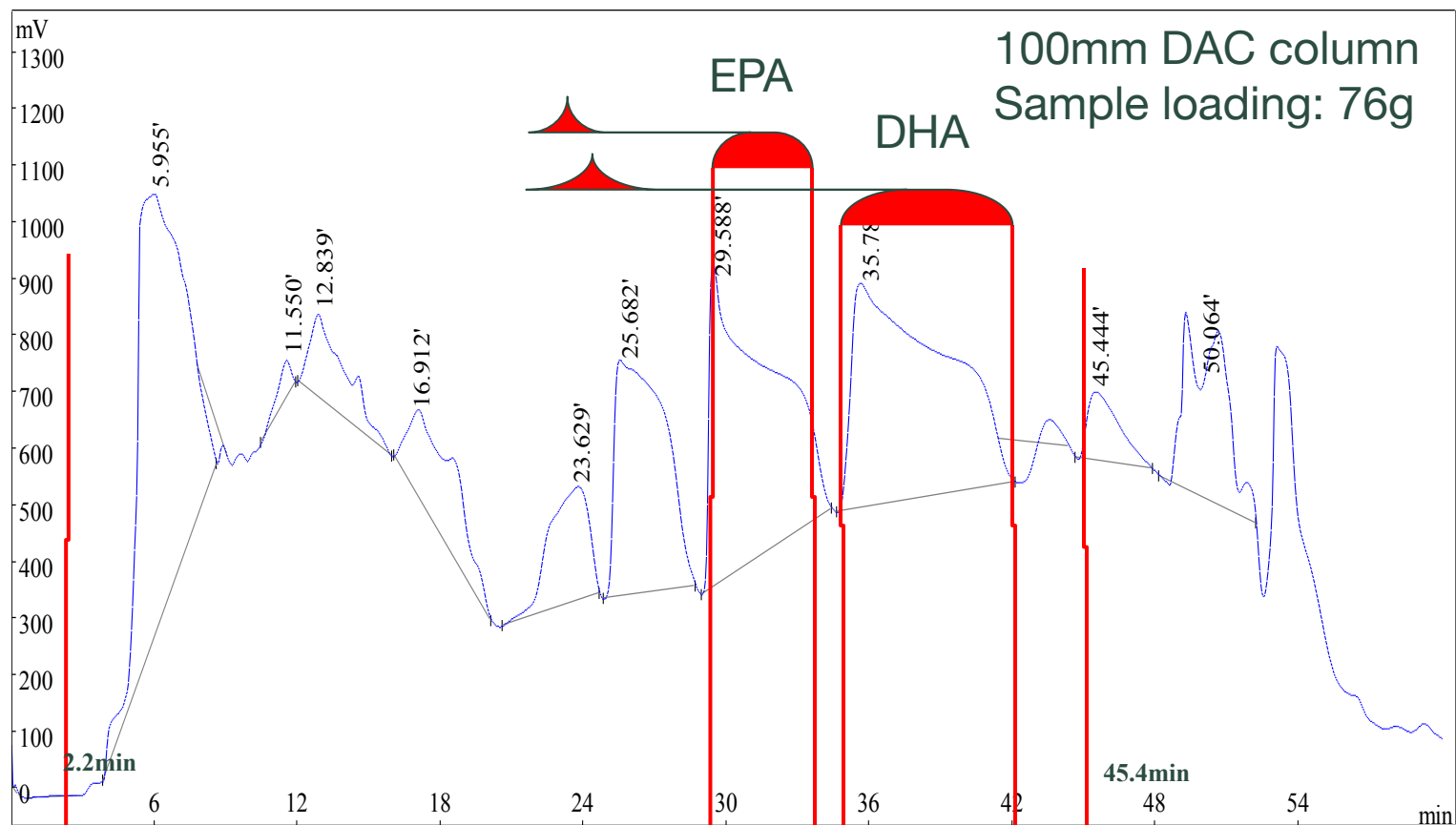
Mobile phase: methanol/water=88:12(v/v)

Flow rate: 1mL/min; Sample loading: 5 $\mu$ L

Wavelength: 210nm

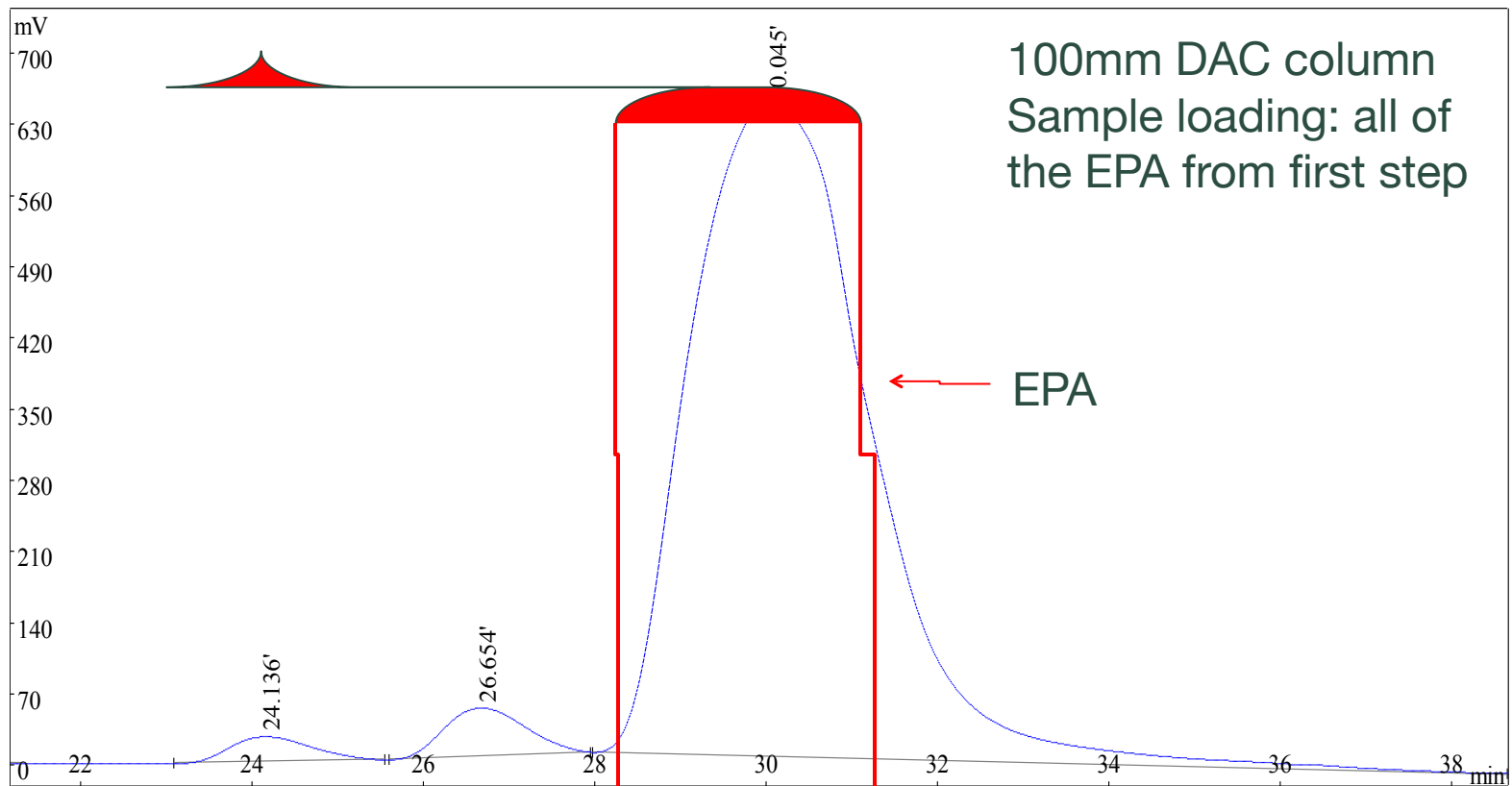
# Application Case -----EPA&DHA

## The first step purification



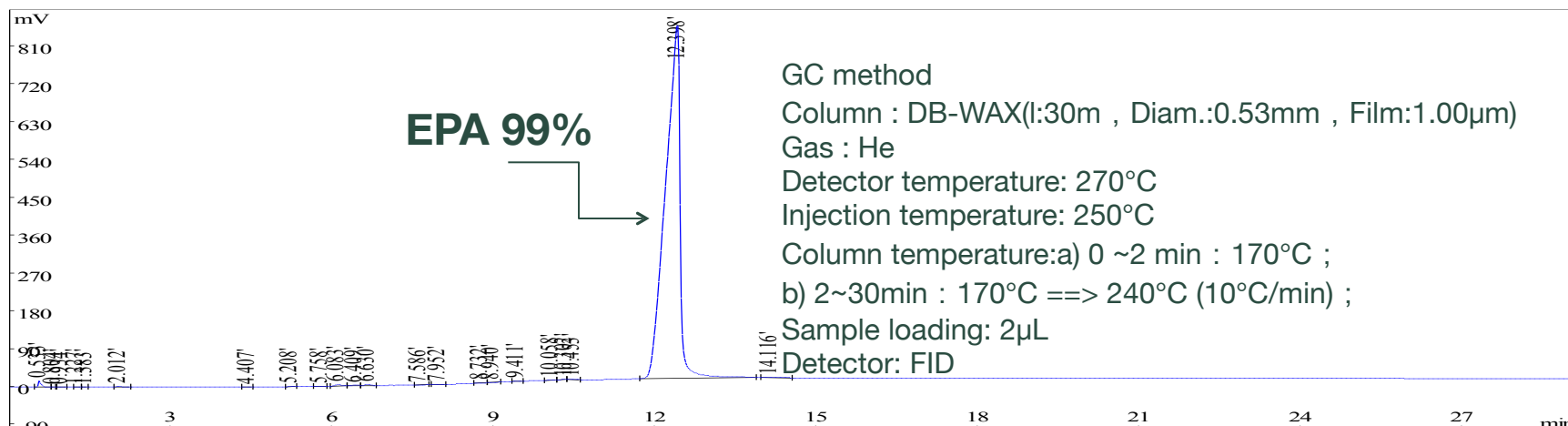
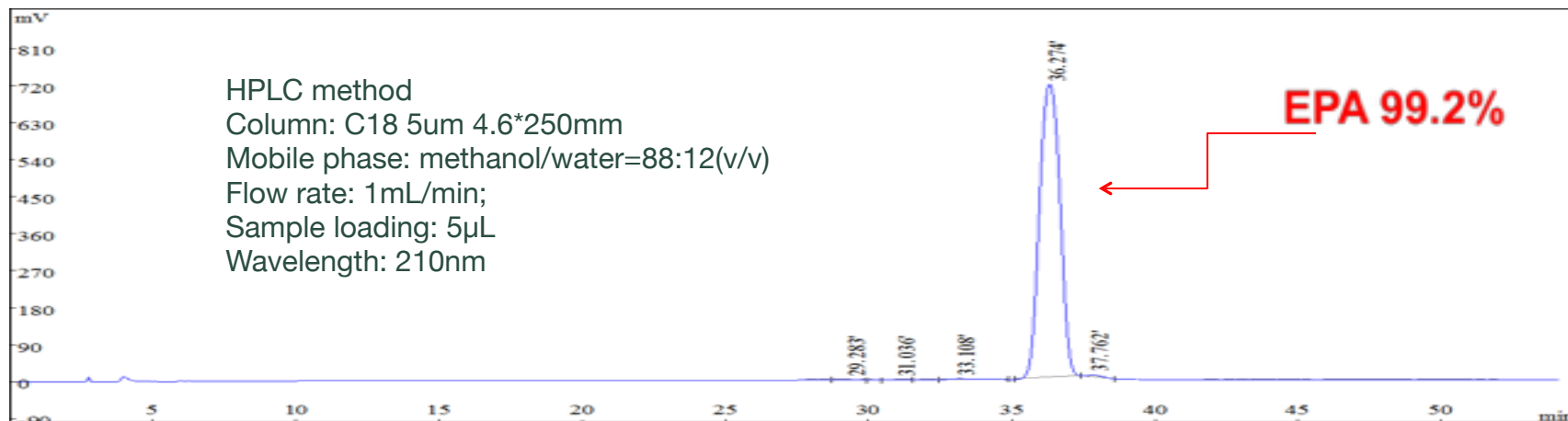
# Application Case -----EPA&DHA

## The second step purification



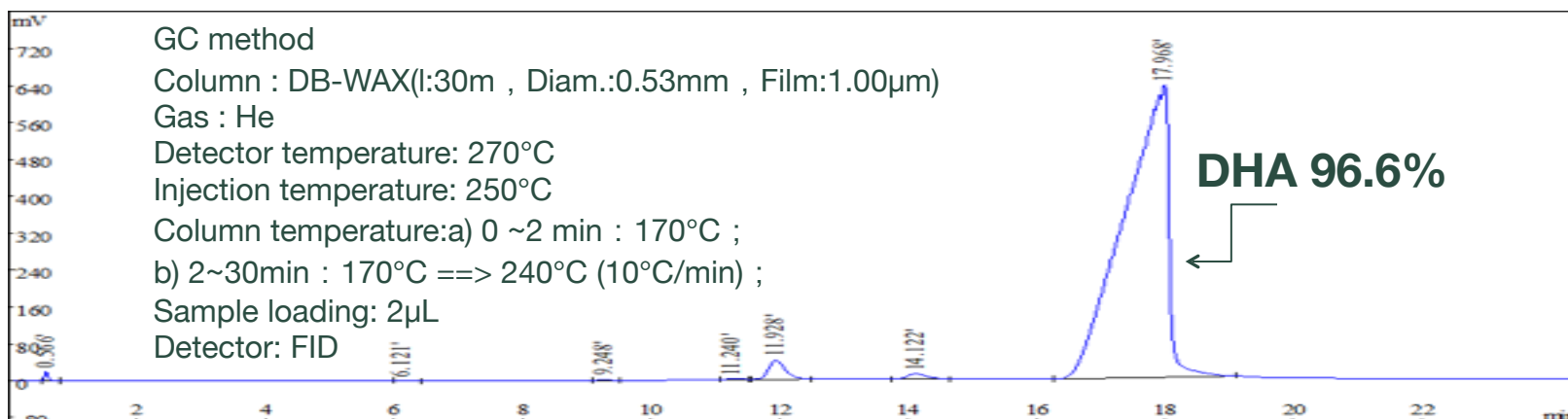
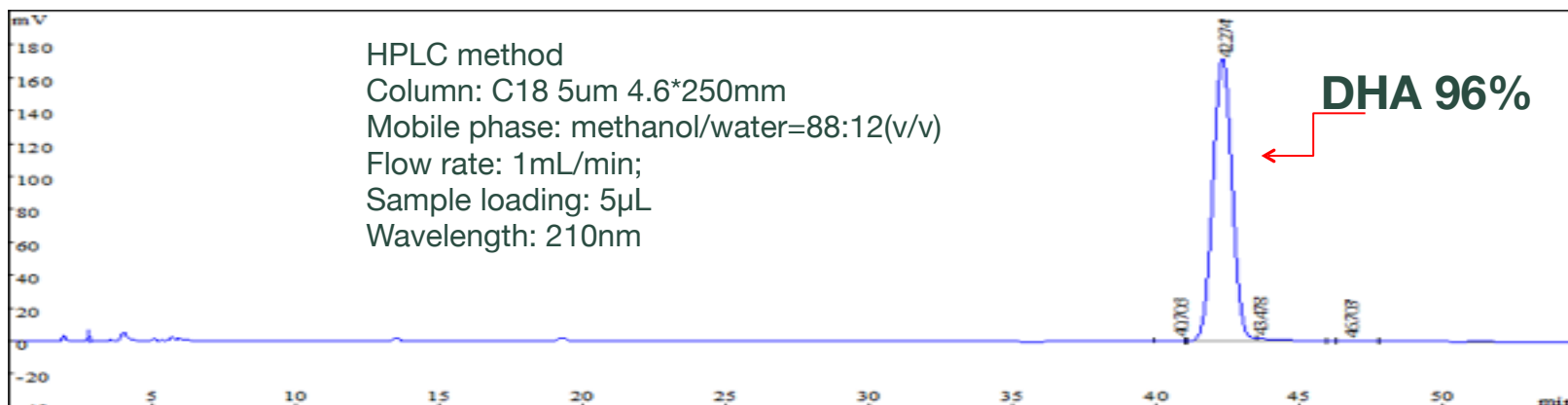
# Application Case -----EPA&DHA

## The final analytical result of EPA



# Application Case -----EPA&DHA

## The final analytical result of DHA





# Application Case -----EPA&DHA

## The estimated product yield by linear scale up

	Sample loading for one injection	Product yield/day	Product yield/month	Product yield/year
<b>DAC300</b>	0.684kg EPA 0.25kg DHA 0.26kg	EPA 4.05kg DHA 4.68 kg	EPA 121.5kg DHA 140.4kg	EPA 1215kg DHA 1404kg
<b>DAC500</b>	1.9kg EPA 0.71kg DHA 0.72kg	EPA 11.50kg DHA 12.96kg	EPA 345.1kg DHA 388.8kg	EPA 3451kg DHA 3888kg
<b>DAC800</b>	4.864kg EPA 1.8kg DHA 1.86 kg	EPA 29.16kg DHA 33.48kg	EPA 874.8kg DHA 1004kg	EPA 8748kg DHA 10040kg
<b>DAC1000</b>	7.6kg EPA 2.8kg DHA 2.9kg	EPA 45.36kg DHA 52.19kg	EPA 1361kg DHA 1565.7kg	EPA 13610kg DHA 15657kg

Note: 1. DAC300, DAC500, DAC600, DAC800, DAC1000, these number means the column inner diameter.

2. The recovery for step one and step two is deemed to 90%.

3. The running time for a day is deemed to 20h, for a month is deemed to 30 day, for a year is deemed to 10 month.

# Thank You !

