Did you know that eggs are rich in antioxidants?

- Two egg yolks (~35 g, one serving) can provide antioxidants equal to half a serving of cranberry (~25 g) or half a serving of apple (~half of an apple) or 5 servings of tomato (5 tomatoes)
- The major phenolic-like antioxidants in egg yolk are tryptophan and tyrosine, two essential amino acids (also found as the major antioxidants in breast milk (Tsopmo and others)

What did we observe?

- Fresh egg yolk has the highest antioxidant activity
- Cooking reduces the antioxidant activity of egg yolk

What does this mean?

- In addition to well-known nutrients, eggs are rich in antioxidants
- Two amino acids, tryptophan and tyrosine, are two compounds in egg yolk with high antioxidant activity
- Cooking reduces the antioxidant activity of egg yolk
- Three different types of cooking show no difference among each other

What did we do in our experiment?

- We were interested in searching for new antioxidant compounds in egg yolk
- We also wanted to find how cooking methods would affect the antioxidants in egg yolk

Antioxidant activity of cooked egg yolks

<table>
<thead>
<tr>
<th>Method</th>
<th>Antioxidant activity (µmol TE/100 fresh egg yolk)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raw</td>
<td>a</td>
</tr>
<tr>
<td>Boiled</td>
<td>b</td>
</tr>
<tr>
<td>Microwaved</td>
<td>b</td>
</tr>
<tr>
<td>Fried</td>
<td>b</td>
</tr>
</tbody>
</table>

Note: Bars with letter 'a' on top are different from bars with letter 'b'

Antioxidant activity of egg yolk compared with several other food commodities

- We found that antioxidant activity of egg yolk is mainly due to two amino acids
- A: Tyrosine
- B: Tryptophan

Yolk sample extraction and analysis

- Separate yolks
- Freeze drying
- Grinding and homogenization
- Yolk sample extraction and analysis