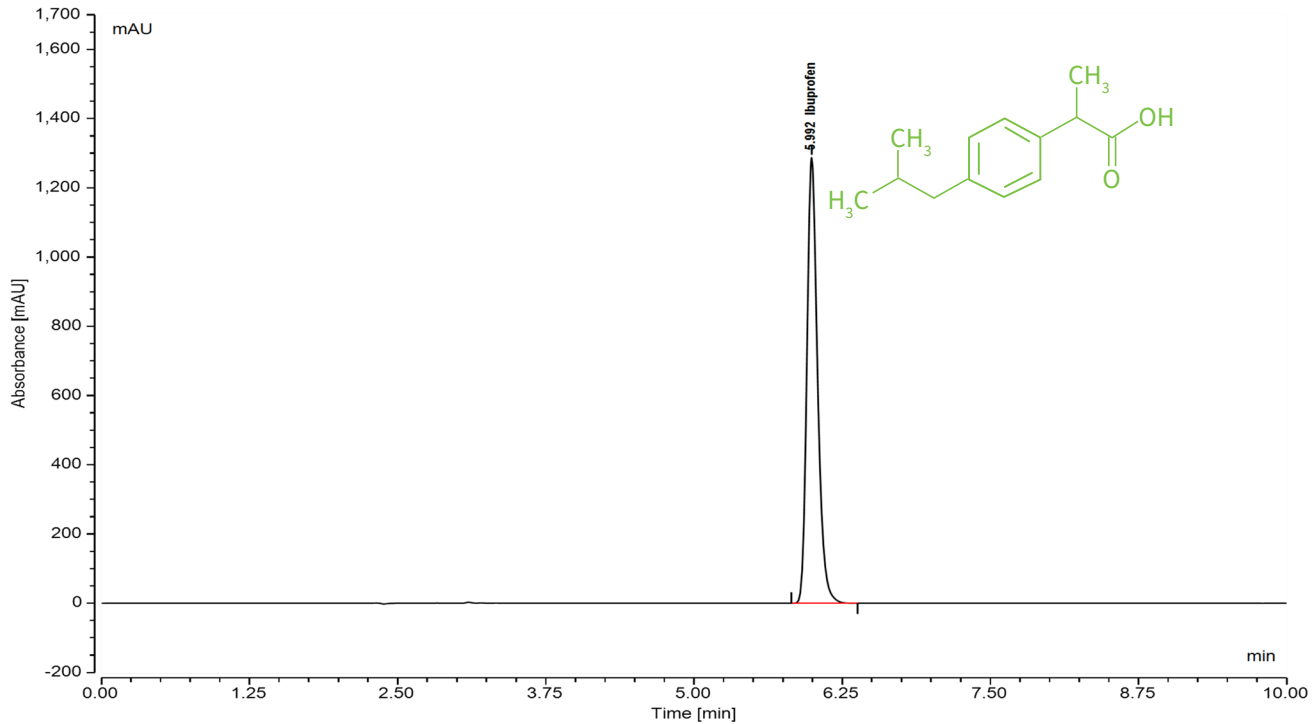




## Ibuprofen

On Endurus<sup>®</sup> C18 Classic WP 5 $\mu$ m 250X4.6



### Test Condition (As Inhouse)

#### Column:

Endurus<sup>®</sup> C18 Classic WP 250x4.6 mm, 5 $\mu$ m

**Injection:** 10  $\mu$ L

**Detection:** UV 220 nm

**Flow Rate:** 1.0 mL/min

**Mobile Phase:** Buffer: Acetonitrile (30:70)

**Buffer:** 0.7 ml of 85 % orthophosphoric acid in 1000 ml Water

**Diluent:** Mobile Phase

**Temperature:** Ambient

Autosampler temperature: 5 $^{\circ}$ C

#### Sample preparation:

weight accurately about 400mg of Ibuprofen into, 100 ml volumetric flask, add 60 ml of acetonitrile, sonicate and make up volume to 100 ml with 0.01M Orthophosphoric acid. Then Transfer 5ml from this solution into 50 ml volumetric flask and dilute to volume with mobile phase

### Chromatographic data

Compound	Ret. Time (min)	Resolution	Tailing Factor	Theoretical Plates
Ibuprofen	5.992	n.a.	1.27	22697

### Discussion

The chromatographic analysis detected a significant peak at 5.992 minutes, representing ibuprofen. Its area under the curve was 8025659  $\mu$ AU\*sec, with a tailing factor of 1.27, indicating a symmetrical peak. The resolution was not explicitly provided, but the absence of co-eluting peaks suggests effective separation. Theoretical plates for ibuprofen were calculated at 22697, indicating good chromatographic efficiency. Overall, the analysis demonstrates robust quantification of ibuprofen, valuable for quality control and pharmacological assessments.

**Note:** Ibuprofen, a nonsteroidal anti-inflammatory drug (NSAID), is widely recognized for its analgesic properties. It is available under various trade names like Advil and Motrin<sup>®</sup>, and is frequently incorporated into combination formulations. Ibuprofen's nonpolar nature makes it interact with the stationary phase, causing it to elute later than polar components. The force driving this separation is a combination of gravity and pressure applied by the HPLC system, ensuring precise quantification of ibuprofen for quality control in pharmaceutical products.

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