

## Non-steroidal anti-inflammatory drugs (NSAID)

### Phenylbutazone and others in the spotlight

Non-steroidal anti-inflammatory drugs (NSAID) are a group of pharmaceutical actives providing analgesic (pain-relieving), antipyretic (fever-reducing) and, in higher doses, anti-inflammatory effects. Members of these substance classes are well-known OTC and prescription drugs for human applications such as aspirin, ibuprofen or diclofenac. Other representatives such as carprofen, vedaprofen and phenylbutazone ("bute") play a role in animal applications, with the latter being prohibited in food-producing animals.



## Veterinary & human applications

Based on their analgesic, antipyretic and anti-inflammatory effects, NSAIDs are used to treat or prevent diseases or tranquilise during transportation or before slaughtering.

**Phenylbutazone** is often administered to sport horses for pain relief from infections and musculoskeletal disorders. Also the usage as doping agent cannot be excluded.

The approval of phenylbutazone for human application varies from country to country: In some countries, such as Germany, phenylbutazone is approved for human application although only short-term administration is recommended due to its various side effects. In other countries, such as the US and UK, phenylbutazone is no longer approved for human use due to its side effects.

## Food regulation

Within Europe, residues of NSAIDs in food are harmonised within Regulation (EC) No. 37/2010. Animal and tissue specific maximum levels are listed for carprofen, diclofenac, firocoxib, flunixin, meloxicam, metamizol, tolfenamic acid and vedaprofen.

**Phenylbutazone** and mefenamic acid are not approved for food-producing animals, no maximum levels are established resulting in a zero-tolerance for these substances in the food chain.

## Presence in the food chain

Within previous National Residue Control Plans phenylbutazone has been identified in the plasma of a very few number of animals (e.g. in cattle, cows and horse within the German National Residue Control Plan 2010 and 2011). No data for the transfer from plasma to meat tissue are available for phenylbutazone. The German Federal Institute for Risk Assessment (Bundesinstitut für

Risikobewertung, BfR) regards the transfer of phenylbutazone from plasma to meat tissue as being limited.

## Our analytical offering

Our experts from the Competence Centre for Veterinary Drug Analysis have long-term experience with the analysis of veterinary drug residues for a large variety of matrices. Our standard portfolio covers well above 150 veterinary drugs. We offer a broad range of screening and confirmation methods from single substance to multi-class analysis.

We offer the analysis of **phenylbutazone** as single substance as well as a comprehensive **NSAID testing protocol** using tandem HPLC-MS covering the following actives (LOQ):

- carprofen (50 µg/kg)
- diclofenac (3 µg/kg)
- flunixin (10 µg/kg)
- 5-hydroxy-flunixin (5 µg/kg)
- mefenamic acid (10 µg/kg)
- meloxicam (10 µg/kg)
- phenylbutazone (5 µg/kg)
- tolfenamic acid (30 µg/kg)
- vedaprofen (30 µg/kg)

Our standard turn-around-time is 7 days. Rush service within 1, 2, or 3 days is also available on request.

A qualitative high-resolution LC-MS/MS screening method for phenylbutazone metabolite oxyphenbutazone complements our analytical portfolio for NSAIDs. Please contact us for your individual offering!