

## Improving aspirin solubility

A method for the production of acetylsalicylic acid-nicotinic acid amide co-crystals with improved solubility.

### Invention

Acetylsalicylic acid (ASA) is one of the most prescribed non-steroidal anti-inflammatory drugs. ASA has an analgesic, anti-inflammatory and antipyretic effect and prevents platelet aggregation. Due to its effects on blood clotting, ASA is also used for cardiovascular prophylaxis and to prevent strokes in high-risk patients.

A significant technical disadvantage of ASA is its very low water solubility. In order to solve this problem, many research groups and companies have been working for a long time on the question of how to improve the water solubility of ASA and thus also its absorption and bioavailability.

The invention provides a reproducible method of producing ASA-nicotinic acid amide co-crystals with improved solubility and bioavailability.

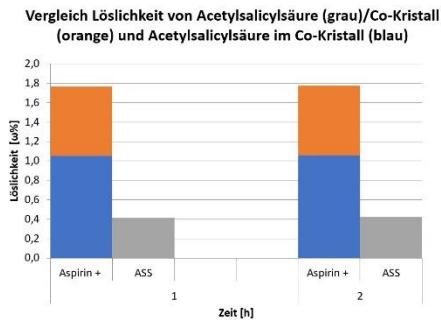


Figure 1: Comparison of acetylic salicylic acid (ASS) and the co-crystal (AP+) of acetylic salicylic acid (ASS in AP+) and nicotine acid amide (NIC in AP+).

### Commercial Opportunities

The invention is available for licensing and further development together with the researchers of the Ruhr-University Bochum.

### Current Status

ASA co-crystals were extensively characterized via NMR-spectroscopy, DSC-thermograms, FTIR, PXRD and TGA analyses. A 2.5 x fold improvement of solubility over conventional ASA was demonstrated. A european priority application has been filed on August 17th 2023.

An invention from the Ruhr-University Bochum.

### Competitive Advantages

- Reproducible synthesis method
- Well characterized co-crystals
- Improved ASA solubility

### Technology Readiness Level

1 2 **3** 4 5 6 7 8 9

Experimental proof of improved solubility

### Industries

- Pharmaceutical industry

### Ref. No.

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