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## Ashland Inc. to highlight controlled-release research at pharmaceutical industry symposium

WILMINGTON, Del. – Solutions to three significant challenges faced by controlled-release-system formulators are the focus of research posters from [Ashland Aqualon Functional Ingredients](#), a commercial unit of Ashland Inc. (NYSE: ASH). The posters will be showcased at the Controlled Release Society's annual meeting July 30 – Aug. 3 in National Harbor, Md.

The research presents solutions for the following challenges:

- How to adequately retard the delivery of high doses of highly soluble active pharmaceutical ingredients (APIs);
- How to solubilize poorly water-soluble APIs; and
- How to avoid any dose-dumping tendency due to co-administration of alcoholic beverages.

“Our research reveals that high-dose (75 percent), controlled-release tablets of highly soluble drugs like metformin and acetaminophen can be made by hot-melt extrusion granulation with cellulosic excipients such as [Klucel™ hydroxypropylcellulose](#) (HPC) and [Aqualon™ ethylcellulose](#) (EC). In addition, tablets from these granules showed exceptional compactability and strength as compared with tablets made by traditional methods,” said Laurie Kronenberg, new product leader, Food and Pharmaceutical, Ashland Aqualon Functional Ingredients.

A second research project featured by Ashland at the conference focuses on matrix tablets formulated with Ashland's Klucel HPC or with [Benecel™ hypromellose](#) (HPMC) that demonstrates no alcohol-induced dose dumping, which is a growing safety and efficacy issue.

The final poster highlights a collaborative research project between Ashland and scientists from the Pharmaceuticals Department at the University of Mississippi on the delivery of low soluble APIs via hot-melt extrusion with Klucel HPC polymer combinations. “We are extremely pleased to work with Dr. Michael Repka and others at the university to advance the research in delivery technologies for poorly soluble APIs,” added Kronenberg.

Ashland Aqualon Functional Ingredients will have representatives at booth 619 during the meeting exposition hours. To learn more about Ashland's pharmaceutical and nutraceutical products, please visit [www.ashland.com](http://www.ashland.com), or contact an Ashland representative by phone at 1-877-546-2782.

Ashland Aqualon Functional Ingredients is a global leader in cellulose ether technology. Delivering pharmaceutical and nutraceutical performance since the 1950s, Functional Ingredients provides a range of functional excipients for solid, semi-solid and liquid dosage forms. Functional Ingredients creates value for its customers through applications knowledge, market insight, regulatory support and a powerful product portfolio: Klucel HPC, Benecel methylcellulose and HPMC, Aquarius™ coatings systems, Natrosol™ hydroxyethylcellulose, Aqualon EC, and Aqualon and Blanose™ carboxymethylcellulose.

In more than 100 countries, the people of Ashland Inc. (NYSE: ASH) provide the specialty chemicals, technologies and insights to help customers create new and improved products for today and sustainable solutions for tomorrow. Our chemistry is at work every day in a wide variety of markets and applications, including architectural coatings, automotive, construction, energy, personal care, pharmaceutical, tissue and towel, and water treatment. Visit [www.ashland.com](http://www.ashland.com) to see the innovations we offer through our four commercial units – Ashland Aqualon Functional Ingredients, Ashland Hercules Water Technologies, Ashland Performance Materials and Ashland Consumer Markets (Valvoline).

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