Medicated chewing gum

January 2010 | As a drug delivery system vehicle, chewing gum enables rapid drug absorption through the oral mucosa to achieve fast onset of action and bioavailability. It also has superior organoleptic properties compared with other dosage forms; it has a more attractive appeal and offers the patient active control over the treatment. Moreover, it also benefits form the advantages inherent to chewing gum, such as oral care, stress relief, improved focus and concentration, and weight management. Also added to the therapeutic benefits of the drug is the positive synergistic effect brought on by the chewing action, which we believe boosts patient compliance.

Fast acting medicines intended as a response to acute unpleasant sensations are suitable for delivery via chewing gum, such as those therapies that target pain (headache, migraine, cough and cold etc.) anxiety, allergy and digestive conditions. However, it is the properties of each drug that determine how effective drug release from medicated chewing gum is. For example, we know that water-soluble drugs have optimal release profiles, whereas poorly water-soluble drugs have slower or partial release because of their interaction with chewing gum.

Why is it not widely used?

Despite the aforementioned benefits, the potential of medicated chewing gums has not yet been fully exploited. The manufacture of chewing gum requires different technology to that used in pharmaceutical production. Standard chewing gum manufacturing requires specific equipment and facilities involving hot-melt processes, which are usually rare in the pharma industry.

Another reason why medicated chewing gum has not yet been fully exploited is because of therapeutic uncertainty related to the drug delivery method – namely, as patient’s mechanical chewing action. The gum’s therapeutic effect depends on chewing, and as each person has their own chewing force, frequency and time, the results can vary.

Manufacturers must also take into account that chewing gum has new parameters to monitor such as desired taste, texture, mouthfeel, appearance, interaction between ingredients, flavouring and so on. All of these influence the final product

The future?

Medicated chewing gums are already available – the most well-known being NRT nicotine gums and antihistaminic motion-sickness gums. A few digestive products are also available and there are many gum-based products in the nutraceutical industry targeting weight management, oral care, probiotics and vitamin applications. The application scope for medicated chewing gums, however, is wide and more products will become available.
Cafosa has developed a new excipient, Health in Gum® - a directly compressible powder gum containing a mix of ingredients to which APIs can be added. To date, Health in Gum® is being used by customers as a way to differentiate their products in a very competitive market and to provide added value to consumers.

Governments and healthcare payers are continually demanding cheaper medicines. While it is true that cheaper medicines are needed to reduce treatment costs, medicines still need to be effective and safe. In this sense, novel drug delivery technologies will continue to be developed, providing both innovation for end users and market differentiation for the companies.

Medicated chewing gum is a valid alternative to standard, chewable or orally disintegrating tablet presentations.