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## **SEQENS and RONDOL partner in formulation research and continuous manufacturing for more effective treatments and more efficient supply chains.**

This collaboration is based on the complementarity between the two companies, SEQENS as a global leader in small molecules Active Pharmaceutical Ingredients (APIs), from the design and development to the manufacturing of APIs, and RONDOL as a technology pioneer for the development and continuous improvement of drug dosage extrusion technologies.

The common objective is to accelerate the development and commercialization of extruded dosage forms with improved bioavailability, reduced side effects and optimized manufacturing costs.

Extrusion is a well-known technology for traditional industries. Repurposing extrusion for Pharma applications was identified 20 years ago due to its extraordinary precision of mixing and resulting impact in terms of drug solubility improvement. It has attracted widespread interest since then but the road was long first to miniaturize extrusion machinery at the microscale, then to identify key process parameters that influence critical quality attributes of a pharmaceutical extruded dosage form during early stage development when the available quantities of APIs are minimal – often in grams - and finally to do all of this at an acceptable capital expenditure and cost.

RONDOL was pioneer in developing extrusion equipment at the microscale and has now patented the highest quality/lowest cost such equipment and SEQENS track record in scaling up pharmaceutical processes to commercial production is praised internationally so that we expect many therapeutic areas will benefit from the crossover of their technologies, for example oncology, central nervous system or infectious diseases.

Also of high interest is that this pooling of expertise can benefit both a faster launch of new biotech inventions and a redesign at better efficiency and lower cost of traditional healthcare treatments - in particular for drugs with potential toxicity concerns and for which the required dosage for treatment is estimated to be high.

Finally during global crisis, drug shortages can become critical as a result of increased demand, shortages in personnel and lockdown restrictions that disrupt the supply chain. This common work towards continuous manufacturing rather than conventional technologies that normally occur at different production sites and often in different countries could therefore also enable a better and faster response to future pandemics.

*“Seqens will bring its skills and expertise in developing and manufacturing small molecules and will rely on Rondol expertise in drug dosage extrusion technologies. We count on this collaboration to bring value to our customers and further increase our portfolio of cutting-edge technologies and services we master in the Seqens’Lab and in our 6 other R&D centers around the world.” Says Pierre Luzeau, CEO – SEQENS*

*"Rondol was the 1st company to launch horizontal micro extrusion machines for Pharma applications and they were used to develop Kaletra tablets against HIV. In 2019 we have patented the 1st vertical Pharma extruder that makes it possible to lower the cost and improve the quality of extruded formulations. We see our collaboration with Seqens as a major step to offer our common customers a strong platform of technology expertise in order to bring sound and fast to the market new or repurposed drugs at competitive costs". Explains Victoire De Margerie – CEO Rondol*

### **About SEQENS**

*SEQENS is a world leader in pharmaceutical solutions and specialty ingredients.*

*With 24 production sites and 7 worldwide R&D-centers in Europe, North America and Asia, SEQENS develops tailor-made solutions and ingredients for the most demanding industries such as healthcare, electronics, cosmetics, food and home care. Driven by a culture of excellence and a strong entrepreneurial spirit, our 3,200 employees are committed to provide our customers-the highest level of service and quality while acting ethically in accordance with our Corporate Social Responsibility program*

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### **About Rondol**

*Rondol Industrie is based in Nancy, France and develops a full range of Hot Melt Extrusion (HME) machinery for high tech industries that require the capability to produce small lots with a « precise » extrusion process such as requested by Pharma. Our greatest asset is our capability to continuously listen to our customers' product and process challenges and gather all worthy information and contacts in order to design and market machinery that meets their needs. In 2019 Rondol launched the "All in One" Pharma extruder with a new innovative vertical format that further reduces the footprint and contamination risk, speeds up the cleaning, facilitates the integration of ancillary equipment for direct final dosage form, and all of this with easy process control and at a fair price.*

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