SAFELIA® AUTOINJECTOR DESIGNED TO BE PATIENTS AND SYRINGES FRIENDLY

Nemera’s new generation of 2-steps autoinjectors for fluid and viscous injections has been designed to ease patient self-injection experience and to deliver, in glass syringes, fluid formulations to challenging drugs (viscous, sustain released, concentrated, in subcutaneous or intramuscular layers, in large volumes...)

Injectable formulations are the fastest growing segment in the pharmaceutical landscape. Biologic therapies are increasingly used to treat a wide range of chronic diseases requiring frequent drug administration over a long period of time. Developing drug delivery devices able to administer the pipeline of biological molecules is a challenge as biotherapeutics tend to be more viscous, concentrated and administered in a larger volume. Considering patient adherence to their treatment is an additional challenge. Less frequent injections, therefore larger volumes and more concentrated, is a target for injection devices which should also deliver with possibly less pain, less bruising and over a short delivery time.

Nemera’s Safelia™ autoinjector platform has been designed as a new injection paradigm to respond to the challenge of handling new formulations taking patients into consideration. Safelia™ autoinjector:

- administers a large range of formulations and injection volumes; the platform can adapt by design to handle liquid injections to highly viscous formulations, taking care specifically of biologics, sustain released formulations and sheer sensitive molecules up to 2,25ml injection volumes
- improves patient experience, with the possibility to reduce needle Gauge, reduce injection time, slowing down the needle penetration inside the body tissues and gives the possibility of a delayed retraction for viscous injections especially.

### BREAKTHROUGH TECHNOLOGY OF AUTOINJECTOR

SAFELIA® - 2-STEP AUTOINJECTOR (AI) FOR 1ML AND 2.25 ML FLUID AND VISCOUS FORMULATIONS

<table>
<thead>
<tr>
<th>Expected benefits</th>
<th>Standard AI</th>
<th>Safelia® AI</th>
<th>Features</th>
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</thead>
<tbody>
<tr>
<td>Creating possibilities for viscous injections with the same AI platform as for standard glass syringes</td>
<td>×</td>
<td>✓</td>
<td>Injects fluid and viscous drugs up to 1000 cP</td>
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<tr>
<td>Risk of syringe breakage eliminated Possibility of using all (or no) syringe flanges</td>
<td>×</td>
<td>✓</td>
<td>No stress on syringe flanges</td>
</tr>
<tr>
<td>Enables increased spring force and use of small gauge needles (less patient pain) without risk of glass breakage</td>
<td>×</td>
<td>✓</td>
<td>No stress on syringe flanges</td>
</tr>
<tr>
<td>Reduction of pain at needle insertion</td>
<td>×</td>
<td>✓</td>
<td>Adjust needle insertion speed</td>
</tr>
<tr>
<td>Reduction of pain during injection</td>
<td>×</td>
<td>✓</td>
<td>No initial injection peak</td>
</tr>
<tr>
<td>Drug is delivered at the right depth</td>
<td>×</td>
<td>✓</td>
<td>Needle insertion disconnected from injection</td>
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Safelia™ autoinjector design is patented. Specificities of Nemera’s autoinjector design are the ability to handle high injection spring forces and deliveries of formulations in standard glass syringes. By design the coupling inside the autoinjector is not made around syringe’s flanges, a structural weak part of the syringe, but around the syringe shoulder. The spring release shock and the energy is absorbed by a rotating cam system and the energy is transmitted in compression and attenuated to the to the glass shoulder. Risks of breakage are therefore reduced by design during triggering of the autoinjector but also during transportation, drop and handling.

Safelia™ autoinjector

- syringes held by the shoulders
- reduces stress on syringe  (max 92 MPa Von Mises stress calculated at impact location, on syringe shoulder)
- Von Mises stress is in compression

Marketed autoinjector

- syringe is held by the flange
- High (201 Mpa max tensile stress calculated at the flange level) and long shock wave propagated along syringe barrel
- Von Mises Stress is in extension

Safelia™ autoinjector is now ready to be customized upon your formulations delivery specifications. Consult us for details.

Nemera has a well-know and established reputation in designing, developing and industrialising parenteral devices. As an example, every day over 5 million diabetics rely on devices manufactured by Nemera over our 4 manufacturing plants with harmonized high standard quality. Upstream of production of pens, autoinjectors, implanters, we rely on the expertise of our Innovation Centre of Development. Safelia® development has benefited from the implication of creative design and human factor specialists, mechanical engineering, testing in our world-class Laboratory, manufacturing and assembly knowledge and extensive mathematical modelling.