

*Supplementary Information*

**Fabricating Scalable, Personalized Wound Dressings with  
Customizable Drug Loadings via 3D Printing**

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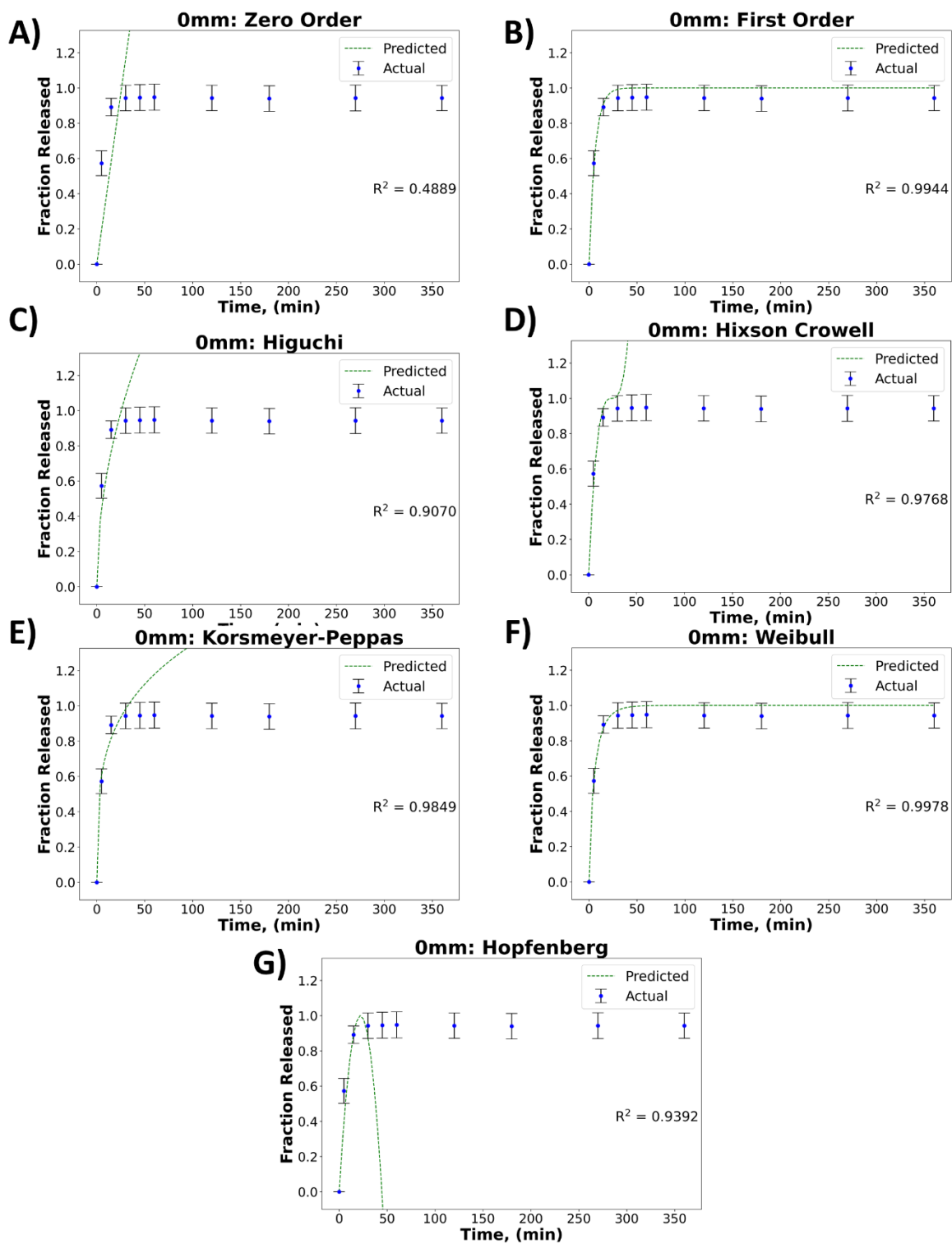
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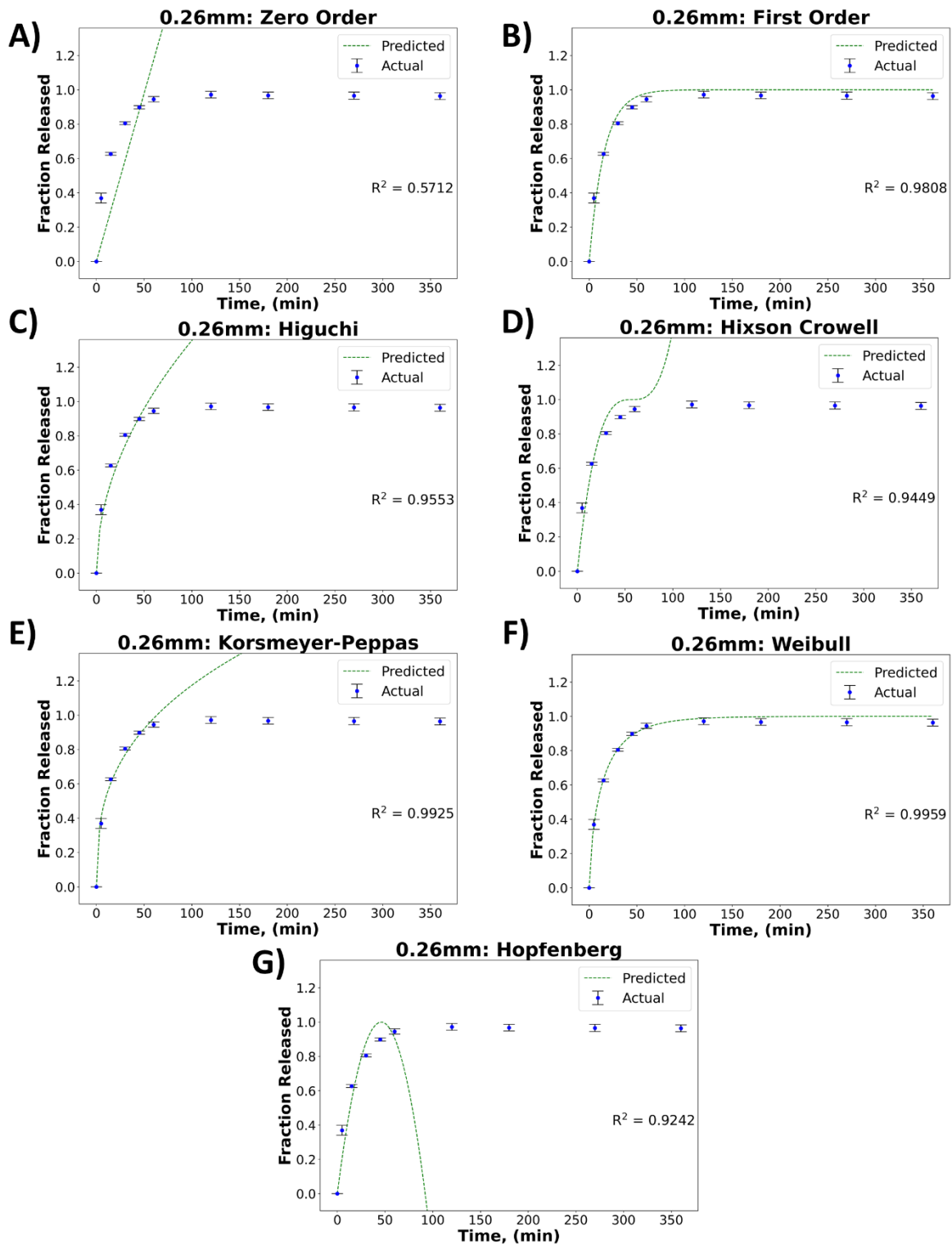
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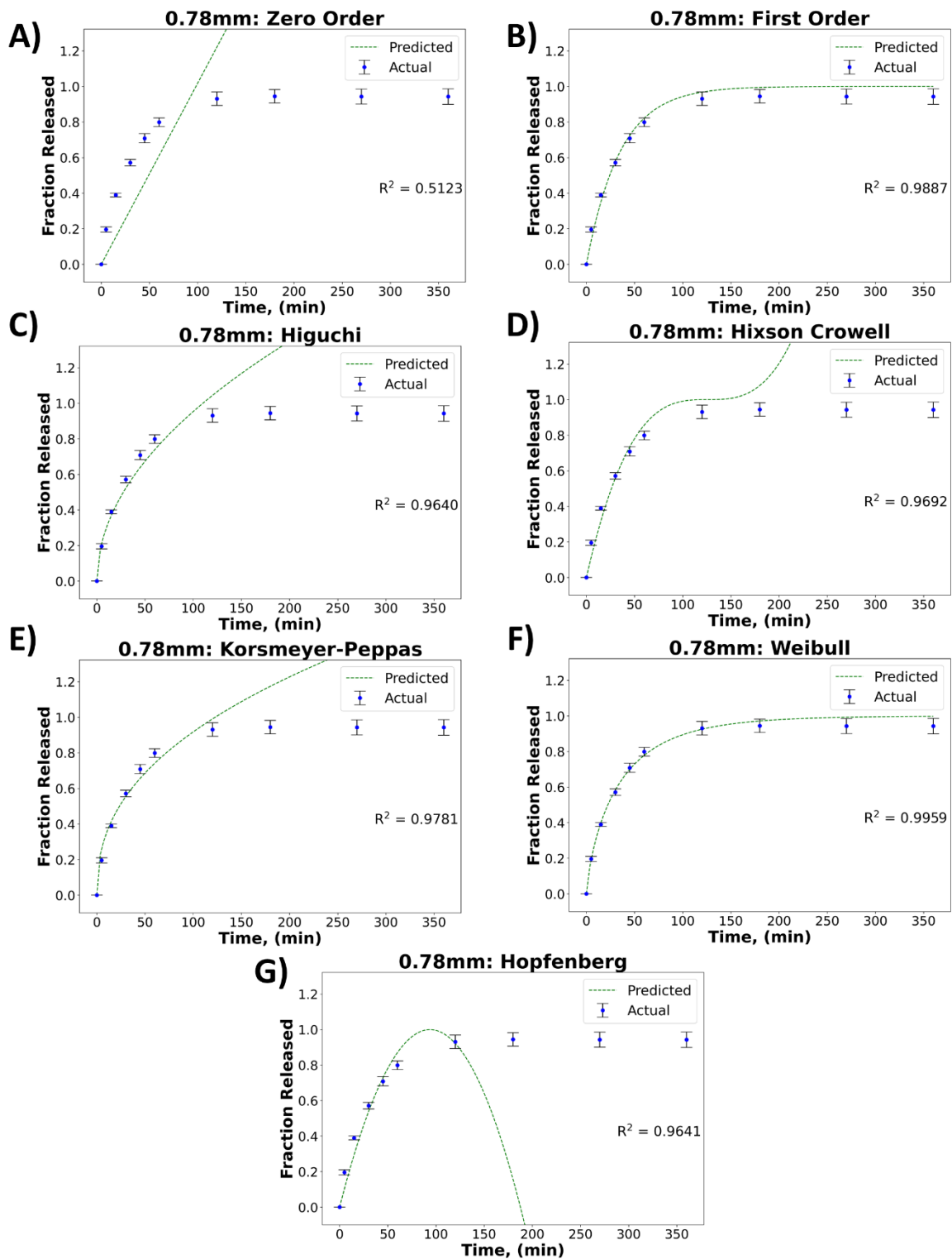
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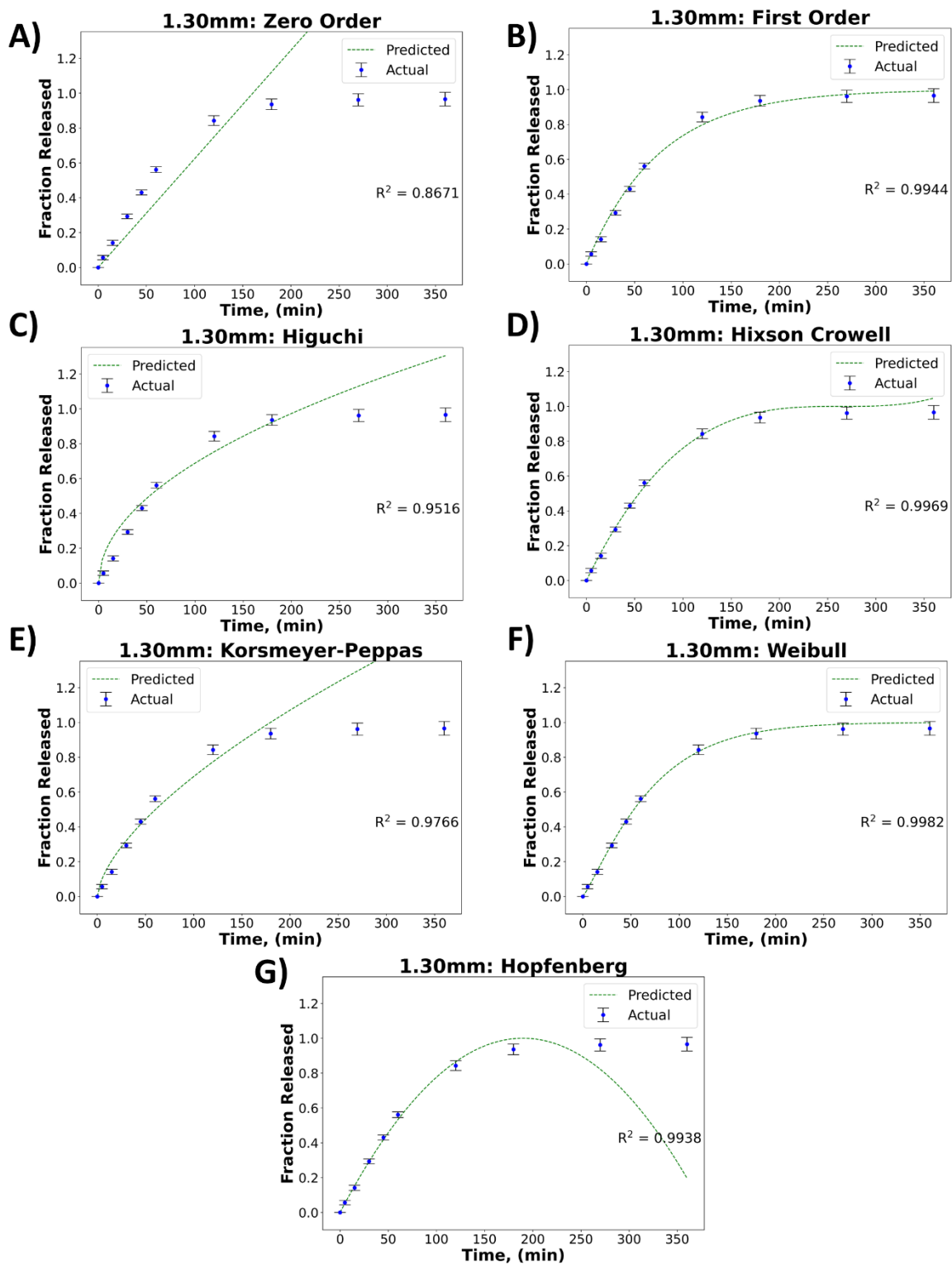
**Figure S1:** Actual release profile of LVX from a wound dressing with no barrier layer, plotted with release profiles predicted by **A)** Zero-order, **B)** first-order, **C)** Higuchi, **D)** Hixson-Crowell, **E)** Korsmeyer-Peppas, **F)** Weibull and **G)** Hopfenberg models respectively.



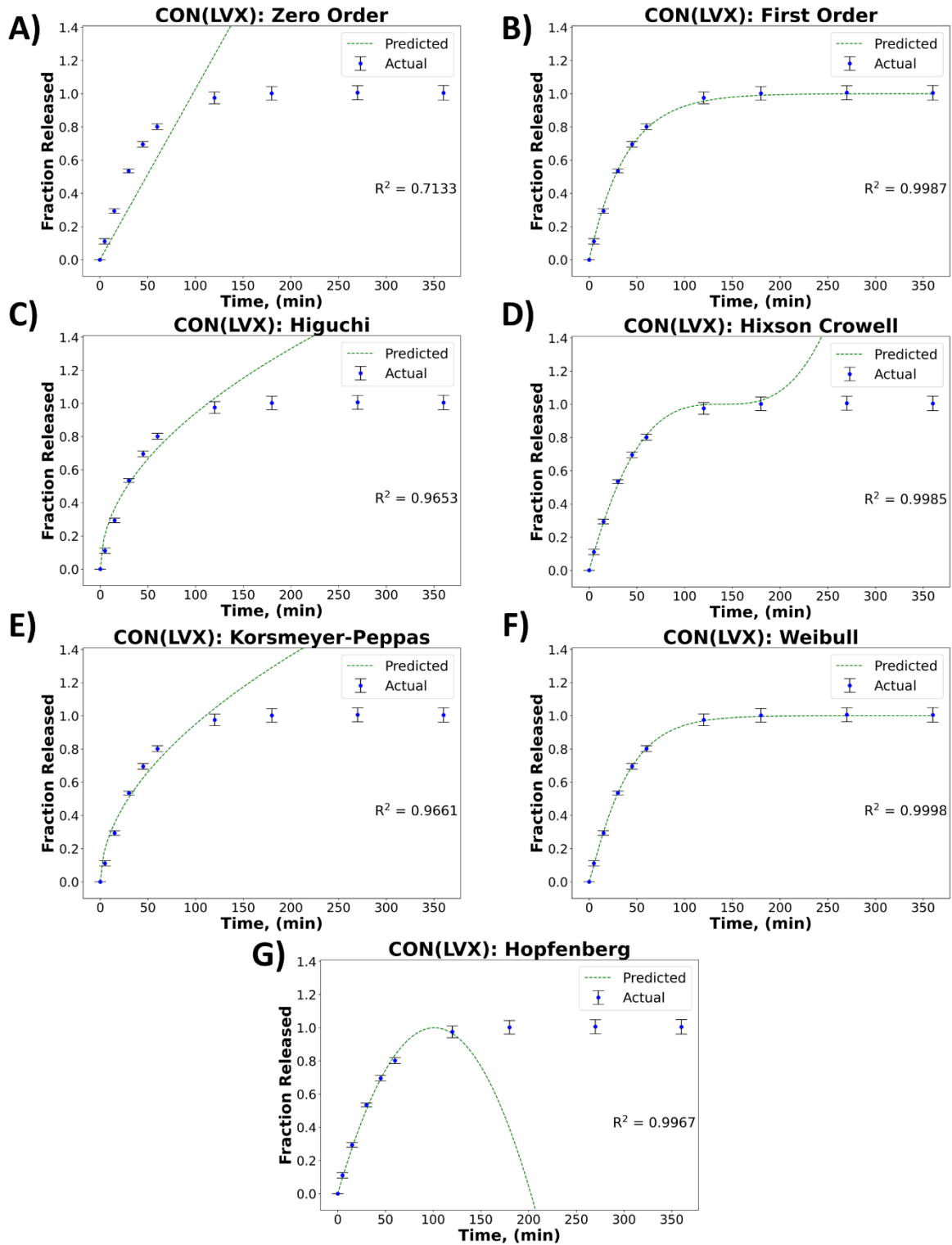
**Figure S2:** Actual release profile of LVX from a wound dressing with a 0.26mm thick barrier layer, plotted with release profiles predicted by **A)** Zero-order, **B)** first-order, **C)** Higuchi, **D)** Hixson-Crowell, **E)** Korsmeyer-Peppas, **F)** Weibull and **G)** Hopfenberg models respectively.



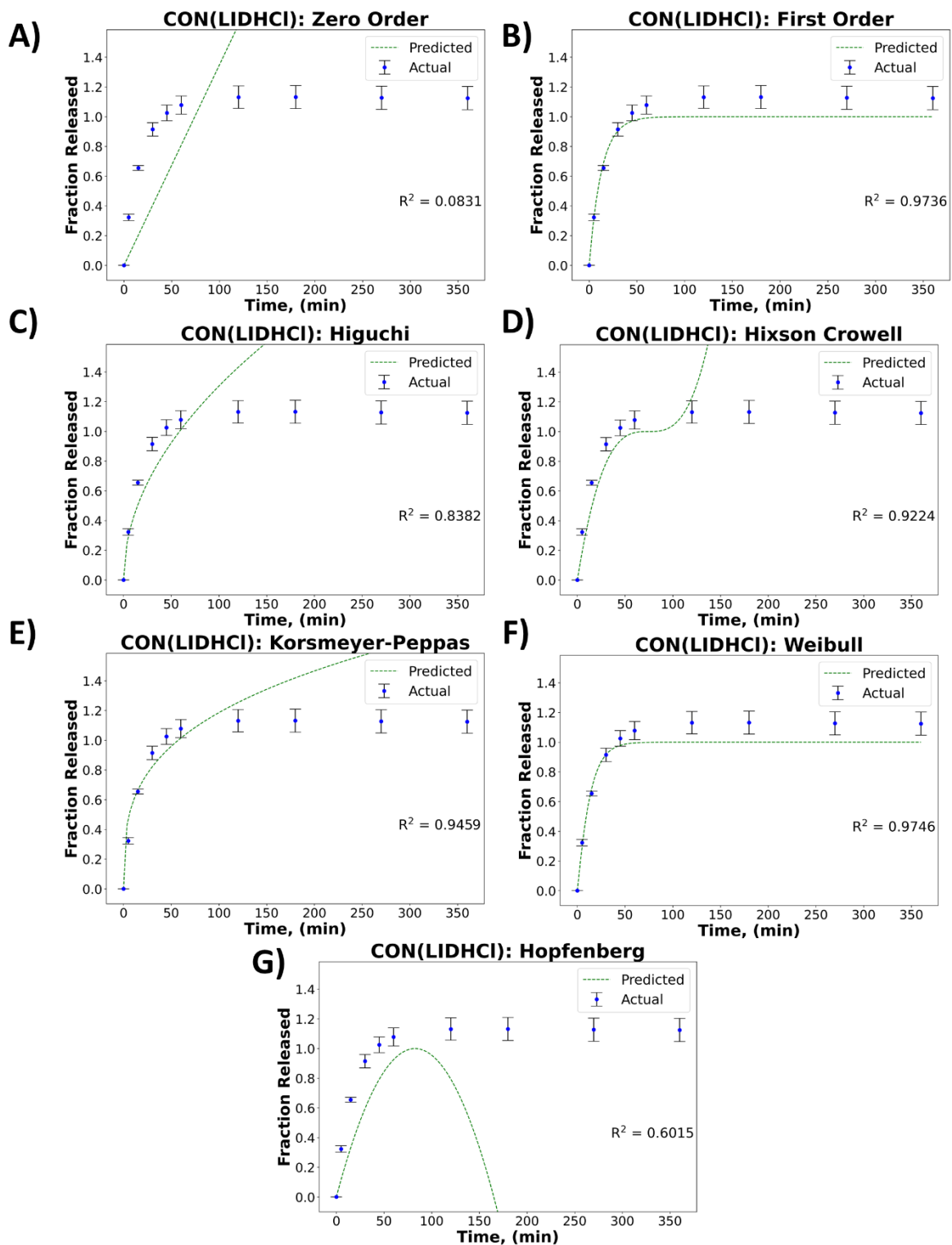
**Figure S3:** Actual release profile of LVX from a wound dressing with a 0.78mm thick barrier layer, plotted with release profiles predicted by **A)** Zero-order, **B)** first-order, **C)** Higuchi, **D)** Hixson-Crowell, **E)** Korsmeyer-Peppas, **F)** Weibull and **G)** Hopfenberg models respectively.



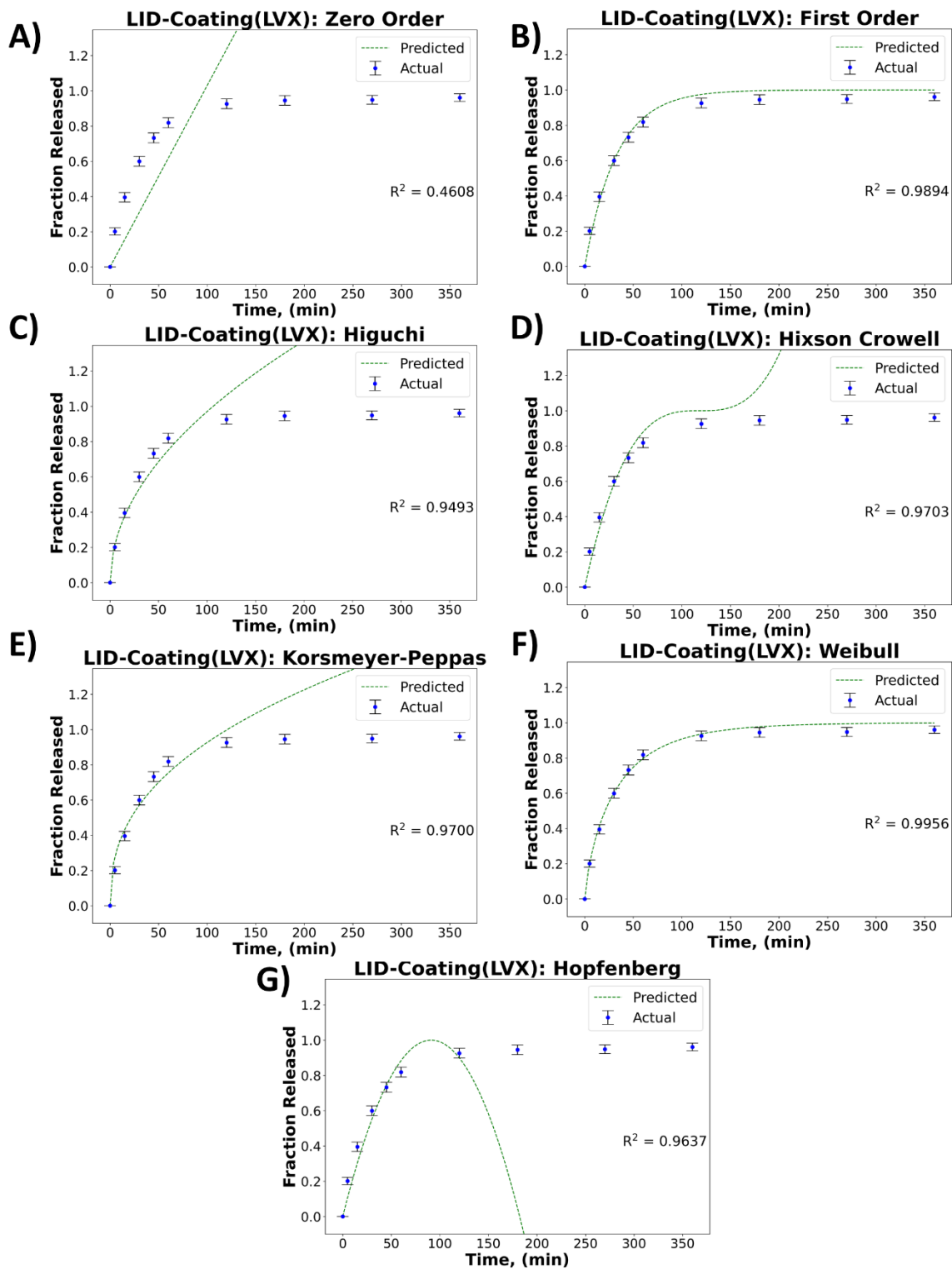
**Figure S4:** Actual release profile of LVX from a wound dressing with a 1.30mm thick barrier layer, plotted with release profiles predicted by A) Zero-order, B) first-order, C) Higuchi, D) Hixson-Crowell, E) Korsmeyer-Peppas, F) Weibull and G) Hopfenberg models respectively.



**Figure S5:** Actual release profile of LVX from a wound dressing loaded concurrently with LVX and LIDHCl, plotted with release profiles predicted by **A)** Zero-order, **B)** first-order, **C)** Higuchi, **D)** Hixson-Crowell, **E)** Korsmeyer-Peppas, **F)** Weibull and **G)** Hopfenberg models respectively.

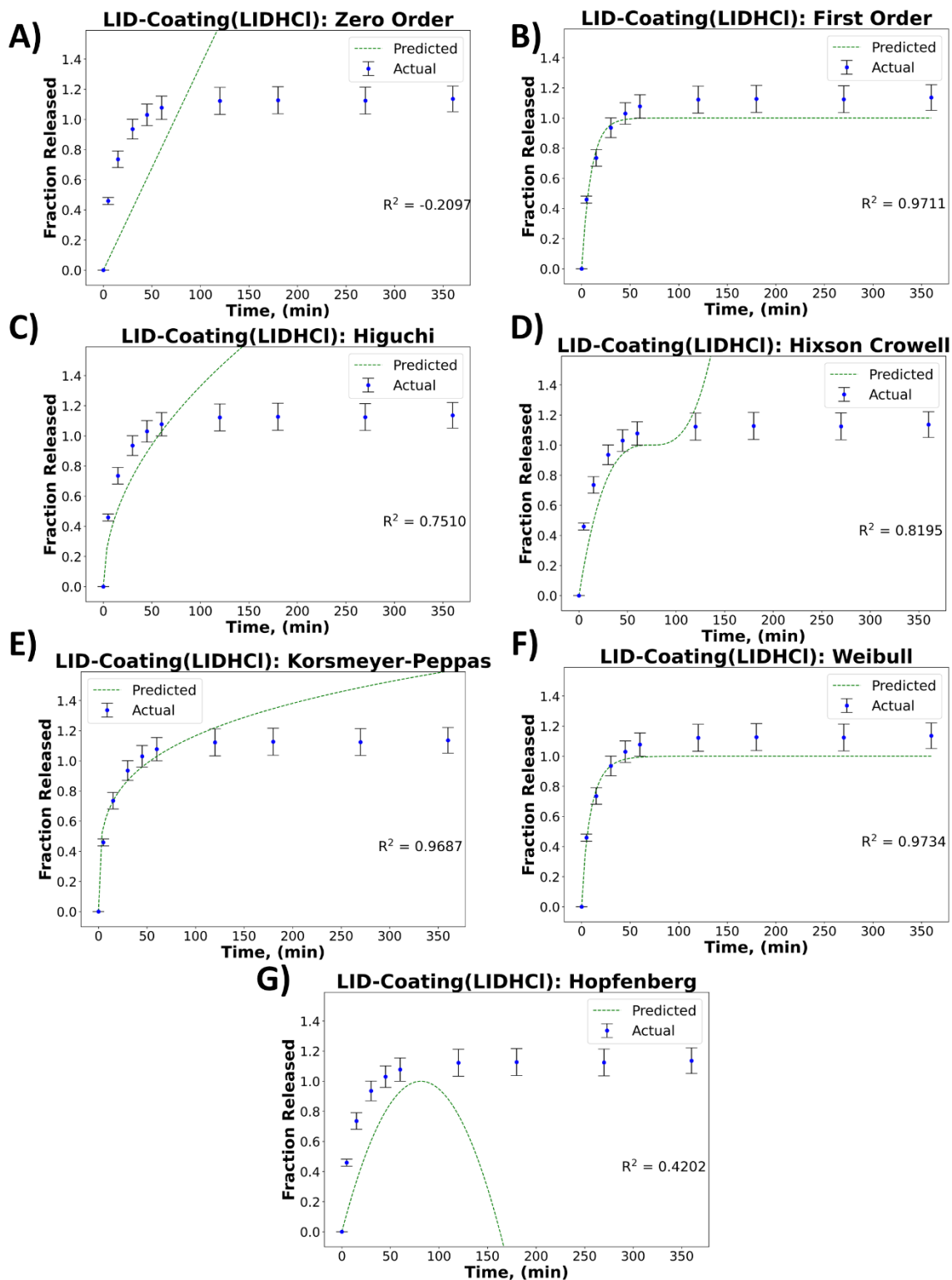


**Figure S6:** Actual release profile of LIDHCl from a wound dressing loaded concurrently with LVX and LIDHCl, plotted with release profiles predicted by **A)** Zero-order, **B)** first-order, **C)** Higuchi, **D)** Hixson-Crowell, **E)** Korsmeyer-Peppas, **F)** Weibull and **G)** Hopfenberg models respectively.

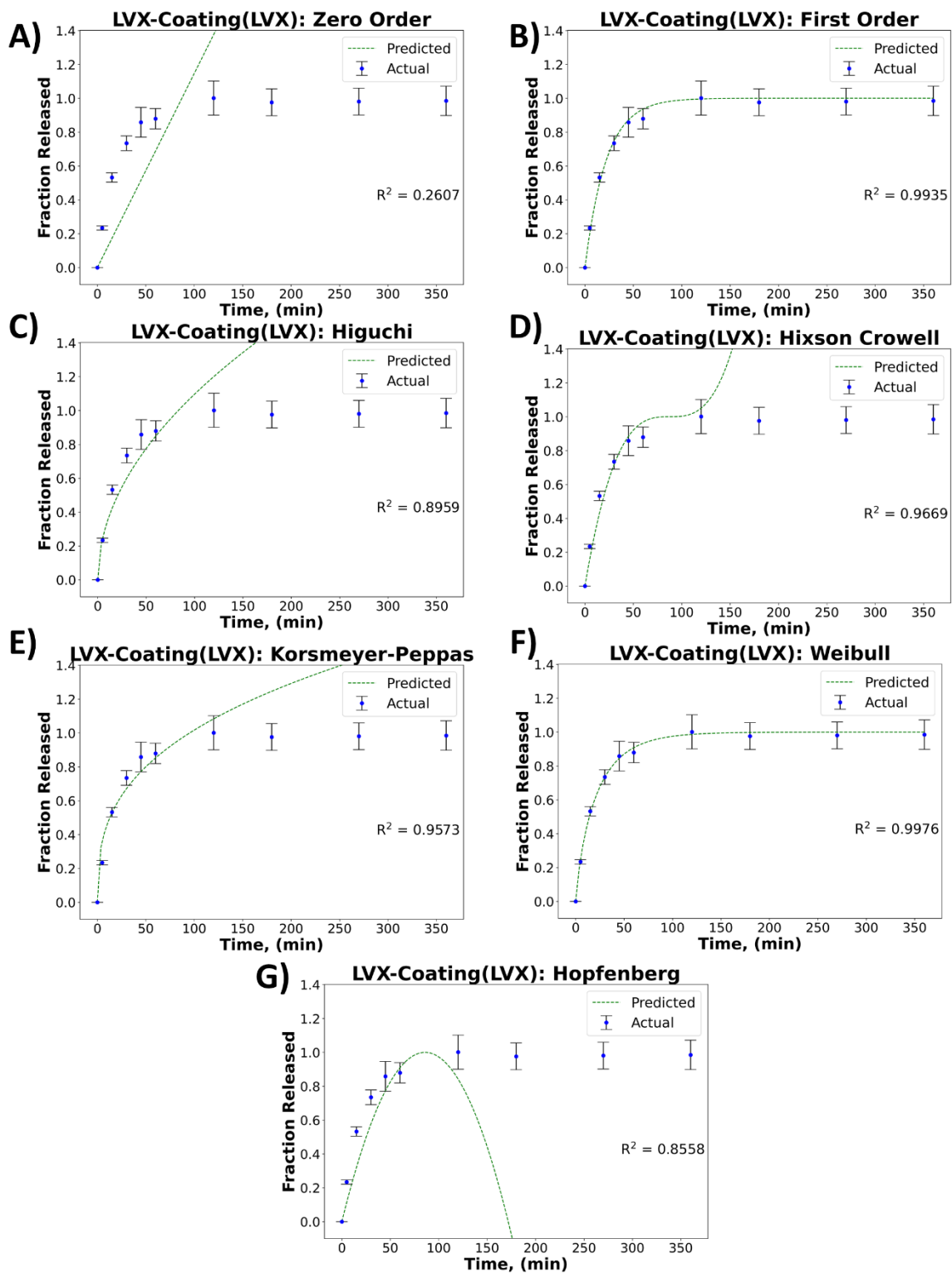


**Figure S7:** Actual release profile of LVX from a wound dressing where a LVX-loaded drug compartment is coated with a barrier layer loaded with LIDHCl, plotted with release profiles predicted by A) Zero-order, B) first-order, C) Higuchi, D) Hixson-Crowell, E) Korsmeyer-Peppas, F) Weibull and G) Hopfenberg models respectively.

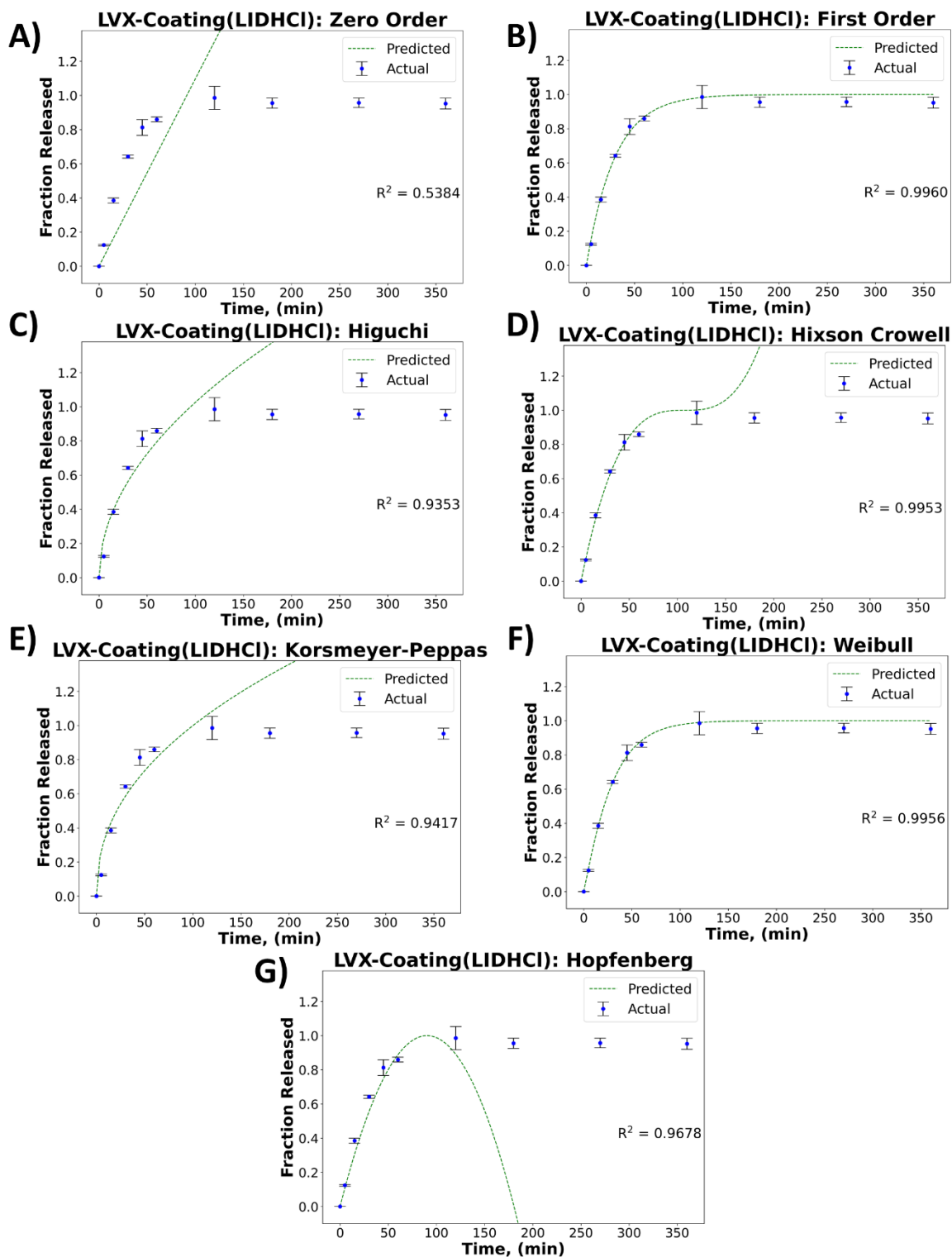




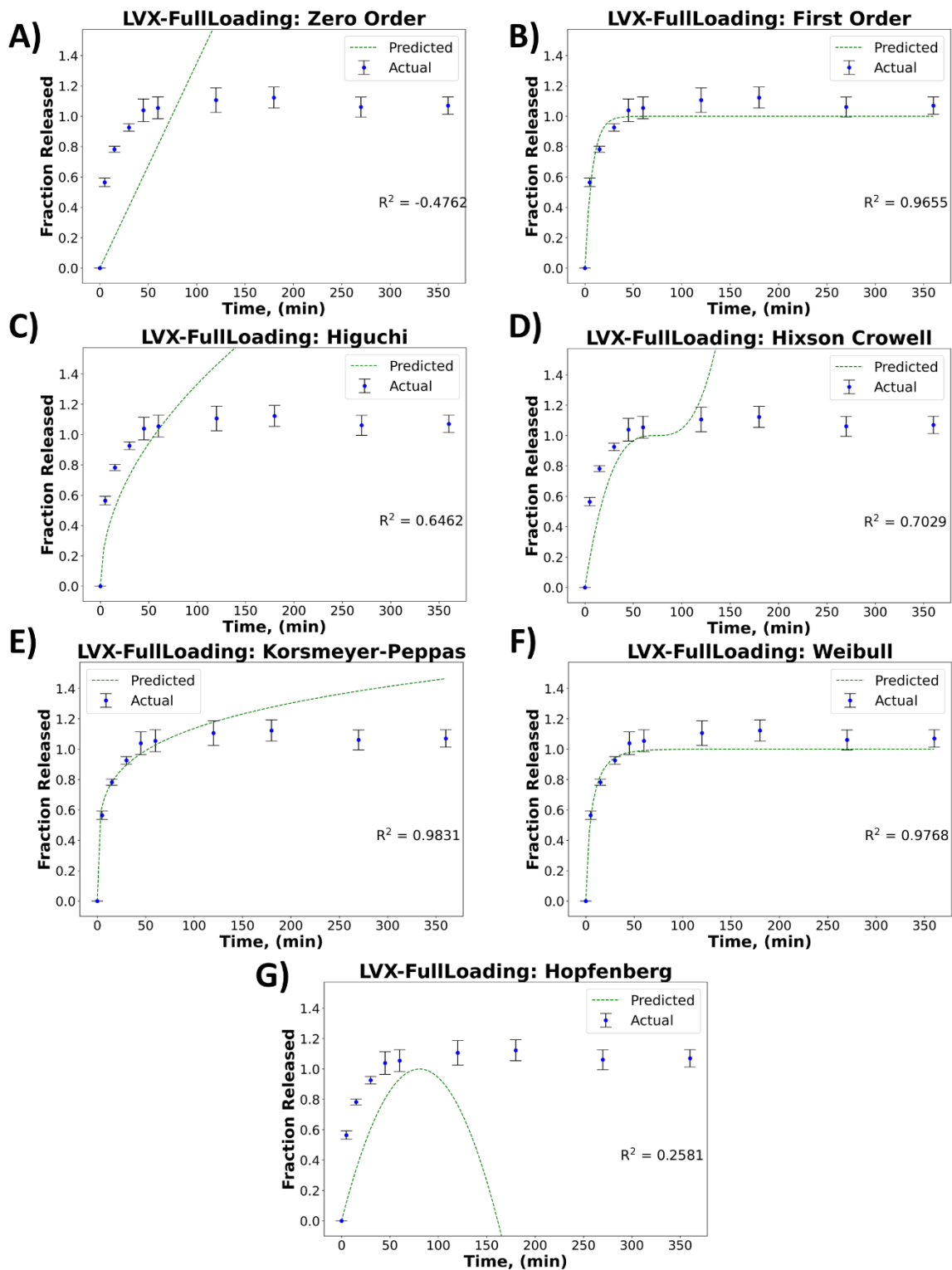
**Figure S8:** Actual release profile of LIDHCl from a wound dressing where a LVX-loaded drug compartment is coated with a barrier layer loaded with LIDHCl, plotted with release profiles predicted by A) Zero-order, B) first-order, C) Higuchi, D) Hixson-Crowell, E) Korsmeyer-Peppas, F) Weibull and G) Hopfenberg models respectively.



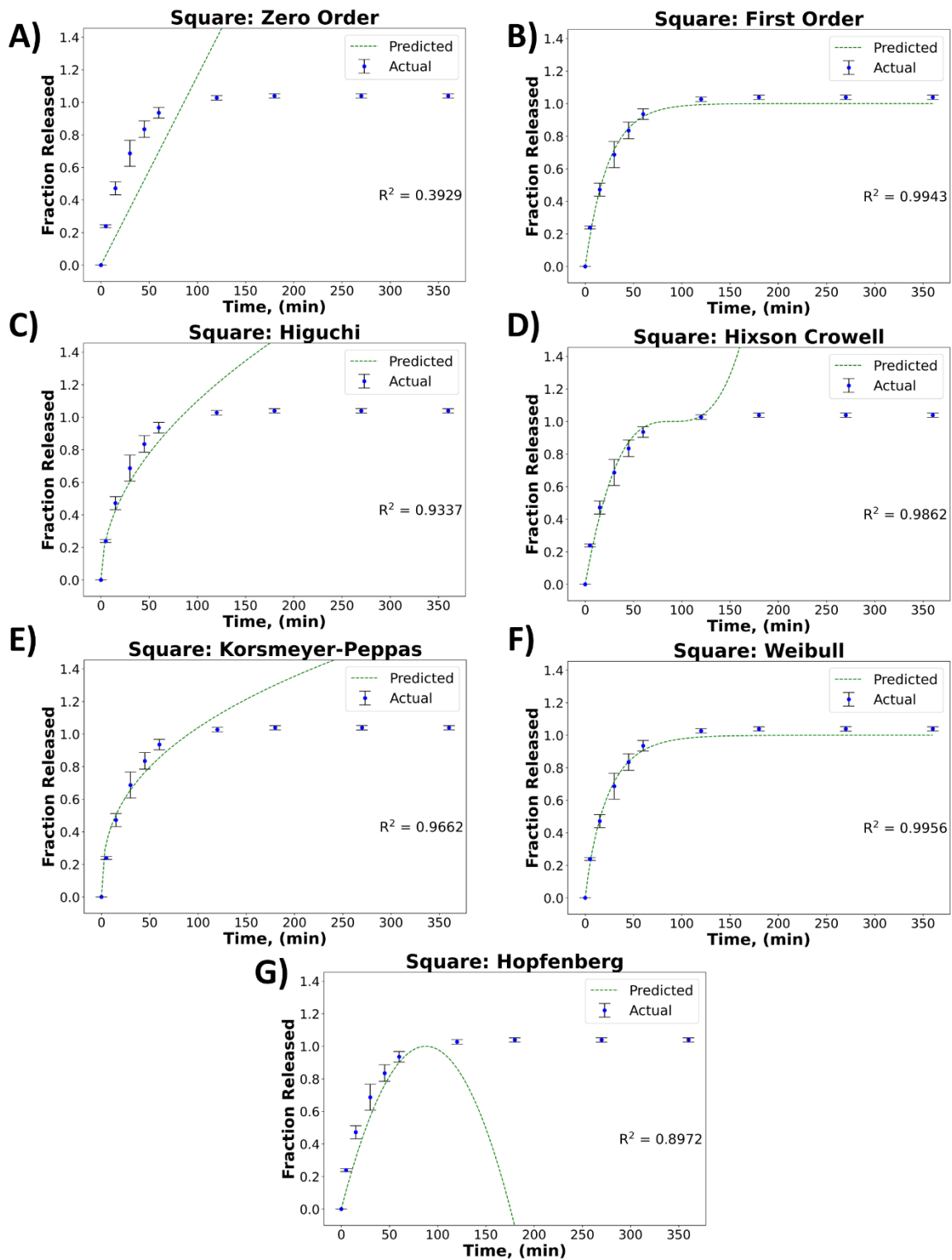
**Figure S9:** Actual release profile of LVX from a wound dressing where a LVX-loaded drug compartment is coated with a barrier layer loaded with LIDHCl, plotted with release profiles predicted by **A)** Zero-order, **B)** first-order, **C)** Higuchi, **D)** Hixson-Crowell, **E)** Korsmeyer-Peppas, **F)** Weibull and **G)** Hopfenberg models respectively.



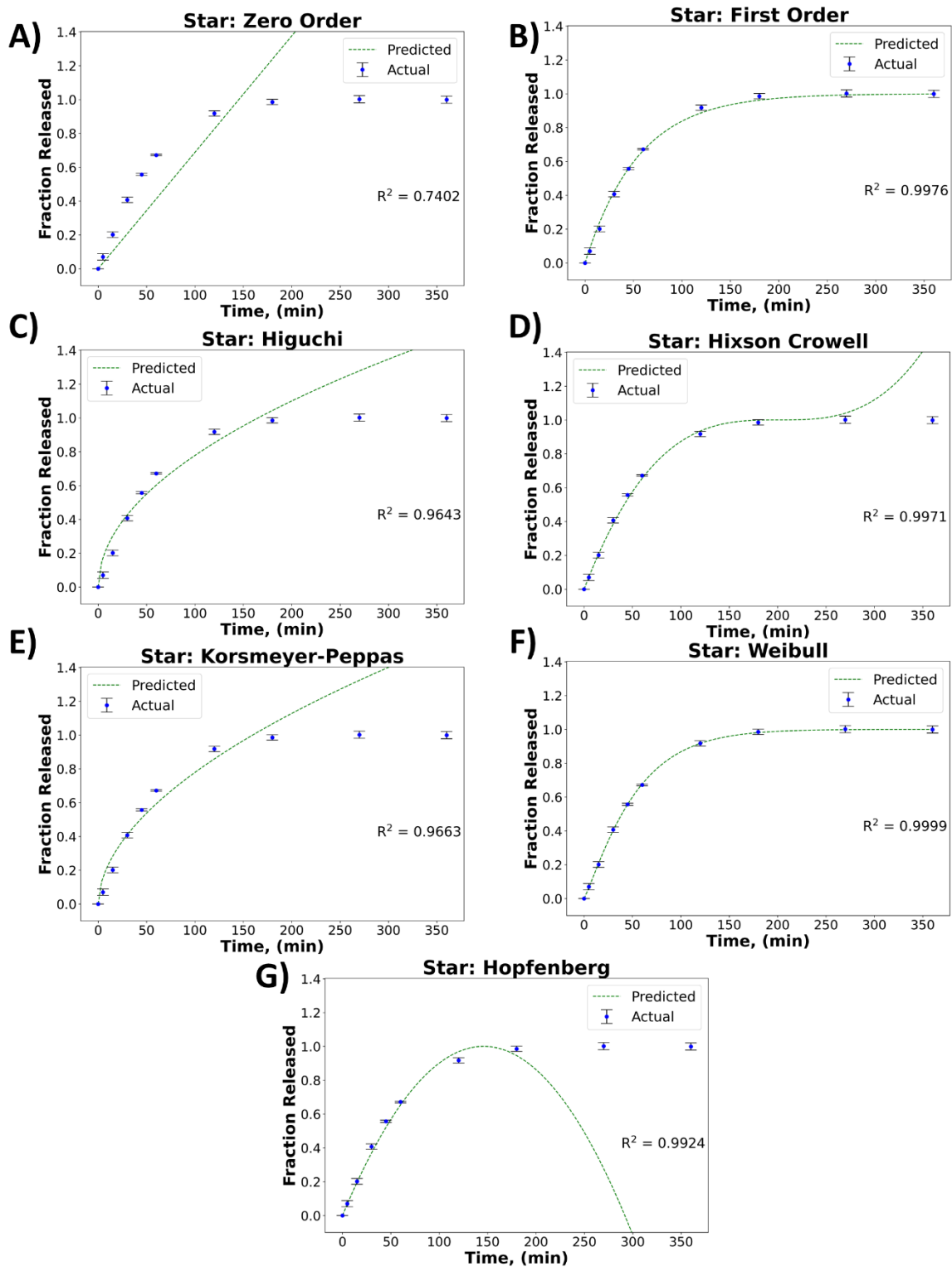
**Figure S10:** Actual release profile of LIDHCl from a wound dressing where a LVX-loaded drug compartment is coated with a barrier layer loaded with LIDHCl, plotted with release profiles predicted by **A)** Zero-order, **B)** first-order, **C)** Higuchi, **D)** Hixson-Crowell, **E)** Korsmeyer-Peppas, **F)** Weibull and **G)** Hopfenberg models respectively.



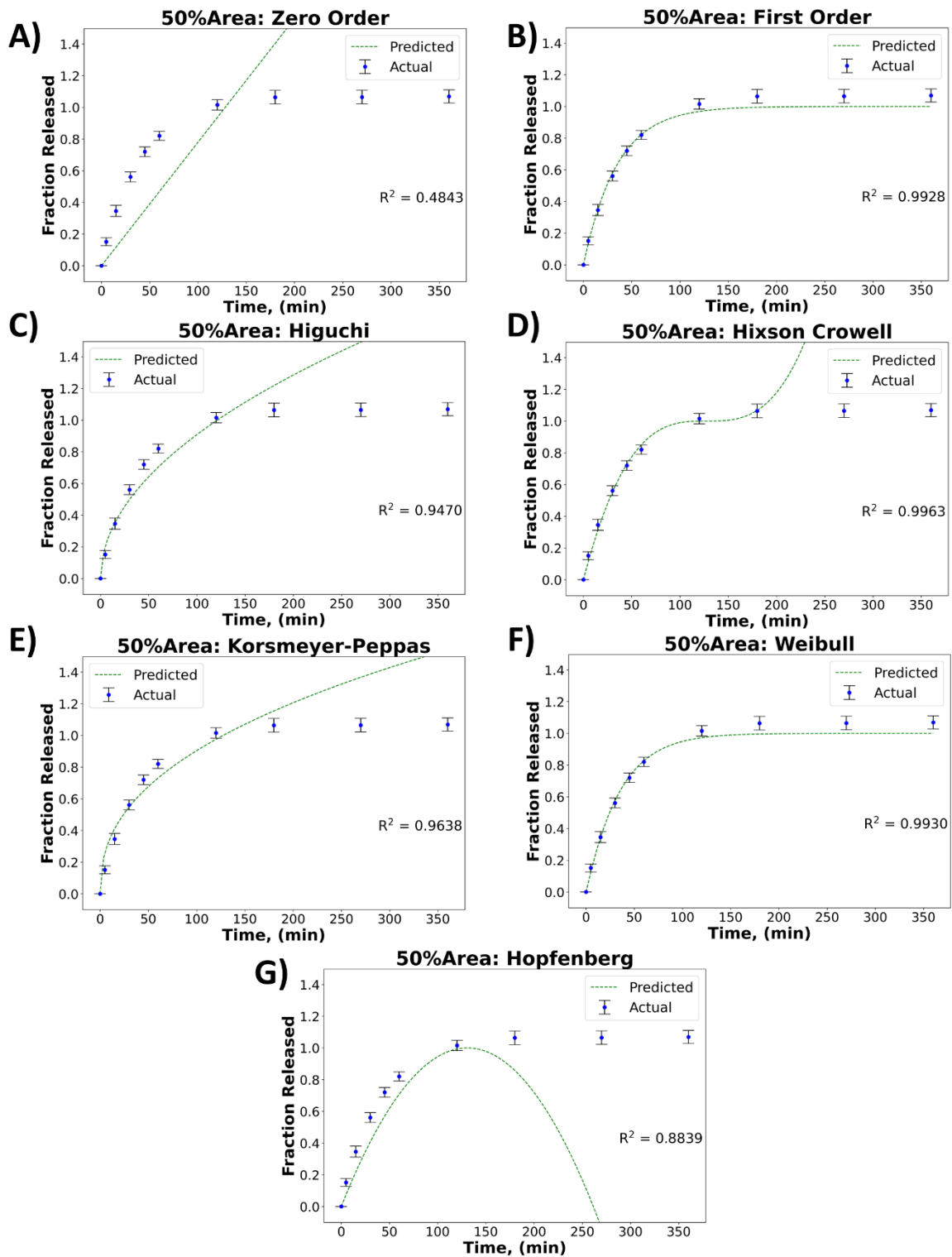
**Figure S11:** Actual release profile of LIDHCl from a wound dressing where a LVX-loaded drug compartment is coated with a barrier layer loaded with LIDHCl, plotted with release profiles predicted by **A)** Zero-order, **B)** first-order, **C)** Higuchi, **D)** Hixson-Crowell, **E)** Korsmeyer-Peppas, **F)** Weibull and **G)** Hopfenberg models respectively.



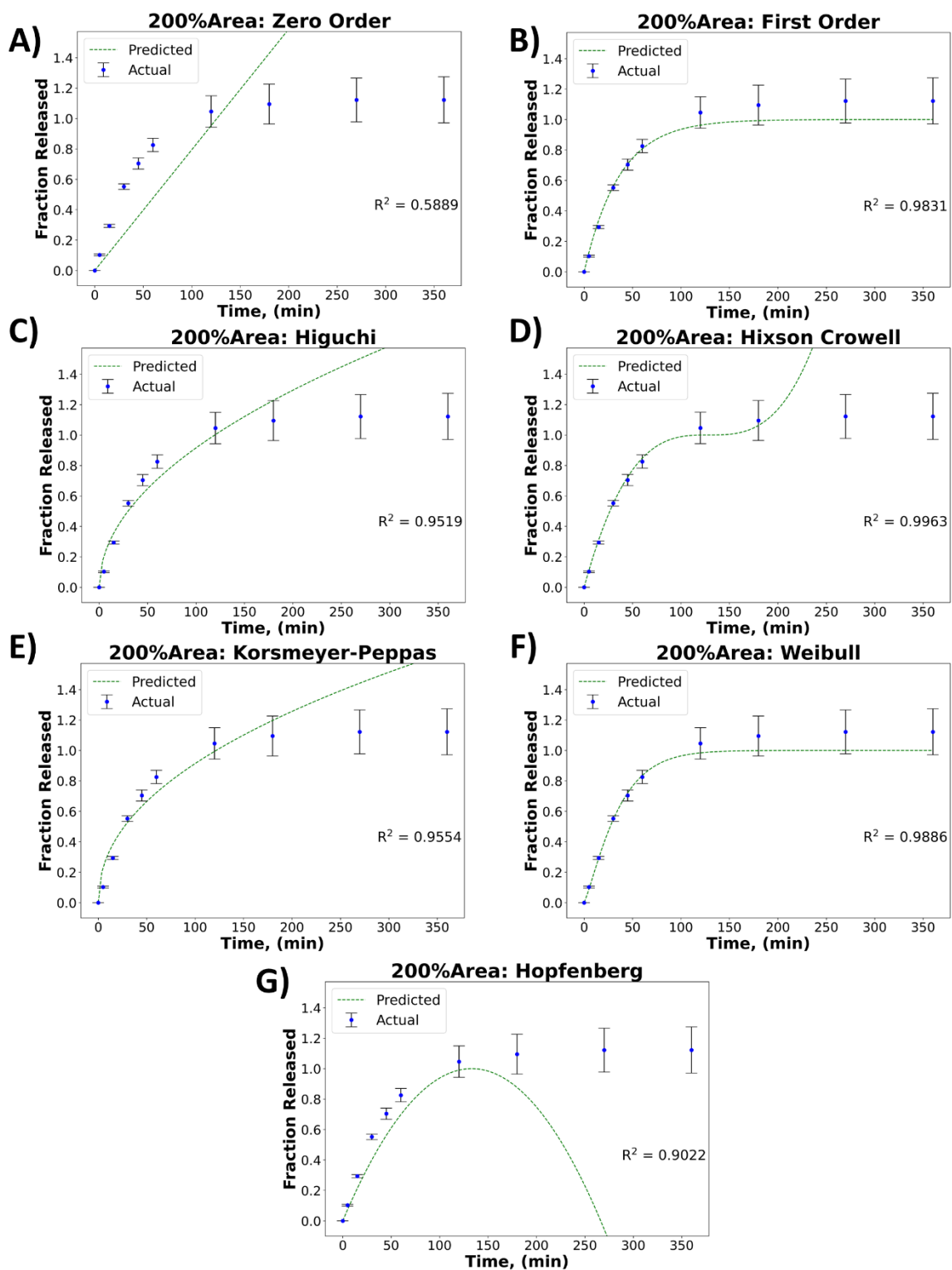
**Figure S12:** Actual release profile of LVX from a square-shaped wound dressing with a 0.78mm thick barrier layer, plotted with release profiles predicted by **A)** Zero-order, **B)** first-order, **C)** Higuchi, **D)** Hixson-Crowell, **E)** Korsmeyer-Peppas, **F)** Weibull and **G)** Hopfenberg models respectively.



**Figure S13:** Actual release profile of LVX from a star-shaped wound dressing with a 0.78mm thick barrier layer, plotted with release profiles predicted by **A)** Zero-order, **B)** first-order, **C)** Higuchi, **D)** Hixson-Crowell, **E)** Korsmeyer-Peppas, **F)** Weibull and **G)** Hopfenberg models respectively.

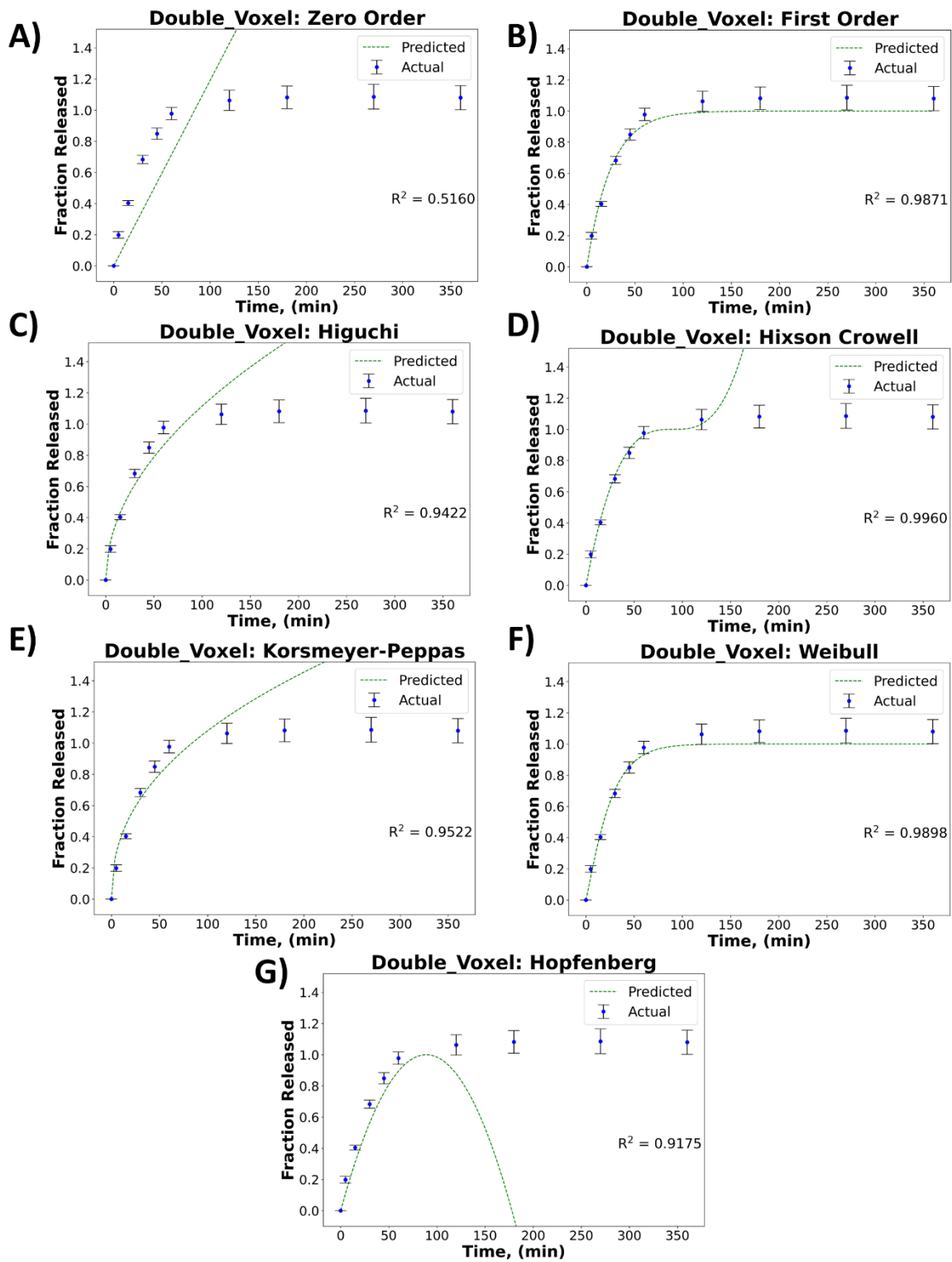


**Figure S14:** Actual release profile of LVX from a wound dressing that is 50% smaller than the one mentioned in **Figure S3**, plotted with release profiles predicted by **A)** Zero-order, **B)** first-order, **C)** Higuchi, **D)** Hixson-Crowell, **E)** Korsmeyer-Peppas, **F)** Weibull and **G)** Hopfenberg models respectively.



**Figure S15:** Actual release profile of LVX from a wound dressing that is 100% larger than the one mentioned in **Figure S3**, plotted with release profiles predicted by **A)** Zero-order, **B)** first-order, **C)** Higuchi, **D)** Hixson-Crowell, **E)** Korsmeyer-Peppas, **F)** Weibull and **G)** Hopfenberg models respectively.





**Figure S16:** Actual release profile of LVX from a wound dressing made of two repeating voxels, where one voxel is the wound dressing mentioned in **Figure S3**, plotted with release profiles predicted by **A)** Zero-order, **B)** first-order, **C)** Higuchi, **D)** Hixson-Crowell, **E)** Korsmeyer-Peppas, **F)** Weibull and **G)** Hopfenberg models respectively.