



## Clinical Pharmacology Consulting

XP Pharma Consulting provides comprehensive clinical pharmacology consulting and PK/PD services that enhance, facilitate, and shorten your drug development time and maximize the impact of each study in all phases of your drug development program. Explore our services and let us know how we can help you or where, in your development, submission, and/or approval process, we can provide additional expertise.

| SERVICES AND DELIVERABLES                           | Pre-IND & IND | Phase 1 | Phase 2 | Phase 3 | NDA/BLA |
|---|---------------|---------|---------|---------|---------|
| <b>Population PK/PD Modeling &amp; Simulation</b>   |               |         |         |         |         |
| Allometric scaling and human PK prediction          |               |         |         |         |         |
| Dose selection and justification                    |               |         |         |         |         |
| Study design and human PK/PD simulations            |               |         |         |         |         |
| Population PK analysis                              |               |         |         |         |         |
| PK exposure-response (E-R) analysis                 |               |         |         |         |         |
| Concentration-QT analysis and modeling              |               |         |         |         |         |
| <b>Noncompartmental PK/PD/TK</b>                    |               |         |         |         |         |
| Noncompartmental analysis and TLFs                  |               |         |         |         |         |
| Submission-ready PK/PD study reports                |               |         |         |         |         |
| <b>Clinical Pharmacology Strategy &amp; Writing</b> |               |         |         |         |         |
| IND protocol authoring (in full or in part)         |               |         |         |         |         |
| Clinical pharmacology plans                         |               |         |         |         |         |
| Clinical study designs                              |               |         |         |         |         |
| Gap Analysis/Question-based review                  |               |         |         |         |         |
| Study protocols (in full or in part) and reviews    |               |         |         |         |         |
| Study reports (in full or in part) and reviews      |               |         |         |         |         |
| Regulation documents preparation (PK/PD)            |               |         |         |         |         |
| Regulatory meeting representation                   |               |         |         |         |         |
| Comparator PK/PD data analysis                      |               |         |         |         |         |
| Pediatric dose determination for PIP and iPSP       |               |         |         |         |         |

| SERVICES AND DELIVERABLES   | Pre-IND & IND | Phase 1 | Phase 2 | Phase 3 | NDA/BLA |
|---|---------------|---------|---------|---------|---------|
| Assess DDI potential based on in vitro study data                             |               |         |         |         |         |
| Integrated assessment for risk of QT-prolongation potential and author report |               |         |         |         |         |
| Author TQT study waiver document  |               |         |         |         |         |
| Regulatory meeting representation   |               |         |         |         |         |
| <b>Clinical Pharmacology Studies</b>  |               |         |         |         |         |
| Single ascending dose (SAD)   |               |         |         |         |         |
| Multiple ascending doses (MAD)  |               |         |         |         |         |
| Bioequivalence and relative bioavailability                                   |               |         |         |         |         |
| Food effects  |               |         |         |         |         |
| Drug-drug interactions  |               |         |         |         |         |
| Thorough QT (TQT)   |               |         |         |         |         |
| Radio-labeled mass balance and ADME   |               |         |         |         |         |
| PK in hepatic-impaired subjects   |               |         |         |         |         |
| PK in renally-impaired subjects   |               |         |         |         |         |
| <b>Regulatory Strategy &amp; Writing</b>                                      |               |         |         |         |         |
| Integrated PK and PK/PD analyses and reports                                  |               |         |         |         |         |
| NDA/BLA (CTD modules 2.7.1 and 2.7.2)   |               |         |         |         |         |
| PK and PD sections of the label   |               |         |         |         |         |
| Integrated immunogenicity analyses  |               |         |         |         |         |
| Responses to questions in the review period                                   |               |         |         |         |         |
| Regulatory representation   |               |         |         |         |         |
| Manuscripts, posters, conference presentation                                 |               |         |         |         |         |

Abbreviations: ADME= absorption, distribution, metabolism and excretion; BLA=biological license application; DDI=drug-drug interaction; E-R=exposure-response; MAD= multiple ascending dose study; NDA=new drug application; PIP= pediatric investigational plan; iPSP = initial pediatric study plan; IND= investigational new drug application; PK=Pharmacokinetics; PD=Pharmacodynamics; SAD-single ascending dose study; TK=toxicokinetics; TLFs=tables, listings, and figures.