

# Fibroblast Growth Factor Receptors Structural Biology

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# **Structural Biology Services**

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Comprehensive Range of X-Ray Crystallography and Cryo-EM Services



## **Fibroblast Growth Factor Receptors**



Off-the-Shelf Structural Biology Constructs

- Experience in the production of Fibroblast Growth Factor Receptors for biophysics and structural biology
- Established MST, nanoDSF and SPR assays for biophysical screening and characterization of proteins and protein-ligand complexes
- Successfully structurally characterized examples:
  - FGFR2
  - FGFR3 WT
  - FGFR3 V555M
  - FGFR4
- Over 60 structures of Fibroblast Growth Factor Receptors determined at up to 1.3 Angstroms resolution



FGFR2







FGFR3- KIN3248 PDB entry 8udt



FGFR4-BLU9931 PDB entry 4xcu



| Protein | Construct | Residues | Mutations | Insertions<br>Deletions | Тад                         | Comment        |
|---------|-----------|----------|-----------|-------------------------|-----------------------------|----------------|
| FGFR2   | CQB4      | 458-768  |           |                         | N-terminal<br>His6-Thrombin | PDB entry 3ri1 |

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#### Off-the-Shelf Structural Biology Constructs

SDS-PAGE



• 10% Tris-Glycine gel



#### aSEC Chromatogram

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#### Off-the-Shelf Structural Biology Constructs



Representative crystals of FGFR2 kinase domain (Construct CQB4) Representative diffraction pattern of FGFR2 kinase domain (Construct CQB4)



| Protein | Construct | Residues | Mutations | Insertions<br>Deletions | Tag                | Comment                |
|---------|-----------|----------|-----------|-------------------------|--------------------|------------------------|
| FGFR3   | CQF7      | 449-759  |           |                         | N-terminal<br>His6 |                        |
| FGFR3   | CQF10     | 455-756  |           | P572_P585delinsSG       | C-terminal<br>His6 | PDB entries 8udt, 8udu |
| FGFR3   | CLF11     | 455-756  | V555M     | P572_P585delinsSG       | C-terminal<br>His6 | PDB entry 8udv         |

#### Off-the-Shelf Structural Biology Constructs

SDS-PAGE

• 10% Tris-Glycine gel

• Reducing condition

Coomassie stained

Lane

1

2

3

4

Quantity

Marker

1 µg

2 µg

5 µg



#### aSEC Chromatogram

- Column: S200
  increase 10/300
- Running buffer corresponds to storage buffer
- Retention time of globular standard proteins is indicated by dotted lines

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| Protein | Construct | Residues | Mutations | Insertions<br>Deletions | Tag                | Comment        |
|---------|-----------|----------|-----------|-------------------------|--------------------|----------------|
| FGFR4   | CRS4      | 450-751  |           | P570_R578del            | C-terminal<br>His6 | PDB entry 4xcu |

# **XPRESS Project Plan**

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Broad Range of Off-The-Shelf Targets



established conditions

### **Structure Determination**

## **XPRESS Portfolio**

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Broad Range of Off-The-Shelf Targets

| Kinases                          | AMP kinase, BRAF, BTK, CDC7-DBF4, CDK1-CKS2-CCNB1, CDK2, CDK2-CCNA2, CDK2-CCNE1, CDK6, CDK9-<br>CCNT1, CDK12-CCNK2, CK1a, CK1d, EGFR, FGFR2, FGFR3, FGFR4, IRAK3, IRAK4, JAK1, JAK2, JNK1, JNK2,<br>JNK3, KIT, LCK, MAP4K1, MKNK2, PIK3Cα, PIK3Cα-PIK3R1, PIK3Cγ, PIP4K2α, PIP4K2β, PIP4K2γ, PKA, PKM2,<br>PKR, RSK1, SIK3, SRC, TYK2, WEE1 |   |
|----------------------------------|---|---|
| Proteases                        | 3C-like protease (SARS-CoV-2 and Norovirus), Cathepsin K, Cathepsin S, MALT1, USP7, USP21   |   |
| Targeted Protein<br>Degradation  | CRBN, DDB1, SKP1-SKP2, SKP1-SKP2-CKS1, VHL-Elongin B-Elongin C  | Over  |
| Histone Modification             | BRD4, BRD9, CREBBP, HDAC2, HDAC7, HDAC8, JMJD2C, JMJD2D, MLLT1, NSD1, PRMT5-WDR77, SIRT2  | 150<br>Targets  |
| Innate Immunity                  | cGAS, STING   | Complete <b>XPRESS</b> Portfolio available on our website |
| Nuclear Receptors                | ERa, GR, RORg   | Link  |
| Nucleic acid<br>binding proteins | APOBEC3B, cGAS, PARP1, SMARCA2, SND1, STAT6, WRN  |   |

## **Contact Us**



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