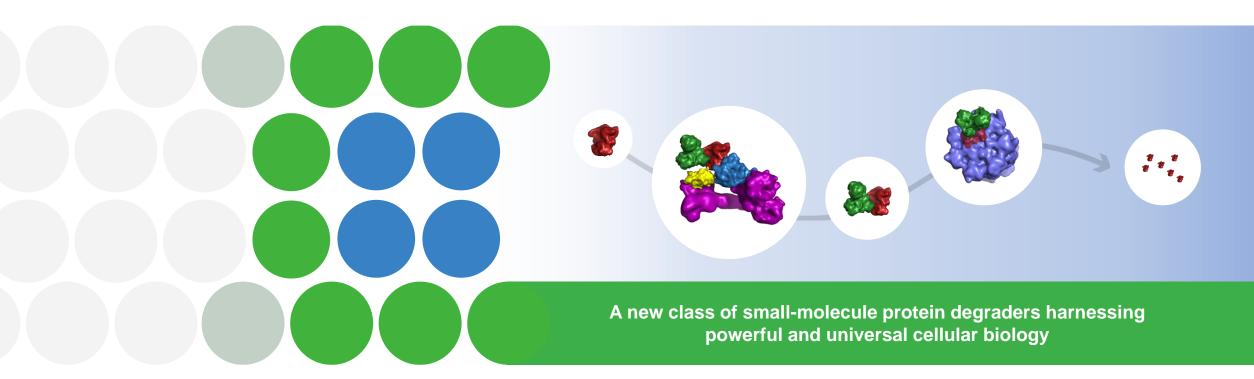
## PIONEERING TRANSFORMATIVE **PROTEIN DEGRADATION THERAPIES**





**Destroyug** Targeting disease-causing proteins to deliver hope

#### **Targeted Protein Degradation Summit**

**Rhamy Zeid** 

October 14, 2020

#### **Forward-looking Statements**

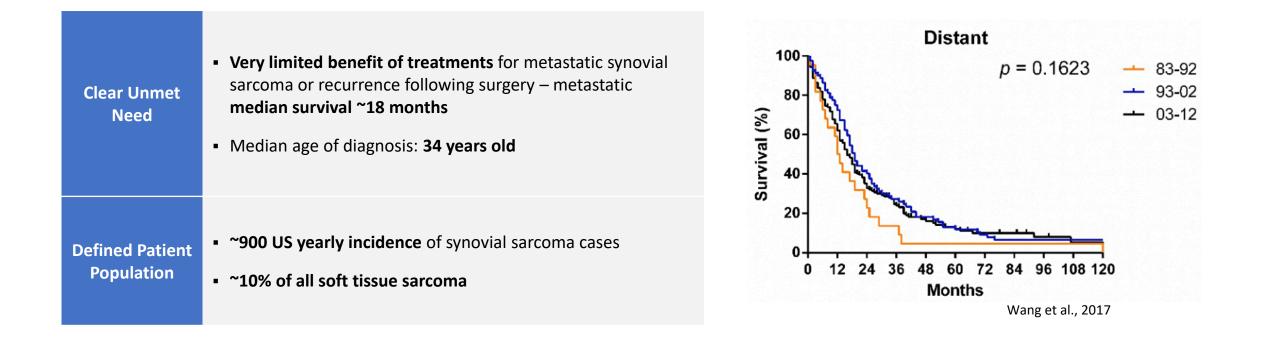
The foregoing presentation contains forward-looking statements. All statements other than statements of historical fact are forward-looking statements, which are often indicated by terms such as "anticipate," "believe," "could," "estimate," "expect," "goal," "intend," "look forward to", "may," "plan," "potential," "predict," "project," "should," "will," "would" and similar expressions. These forward-looking statements include, but are not limited to, statements regarding the therapeutic potential of C4 Therapeutics, Inc.'s technology and products. These forward-looking statements are not promises or guarantees and involve substantial risks and uncertainties. Among the factors that could cause actual results to differ materially from those described or projected herein include uncertainties associated generally with research and development, clinical trials and related regulatory reviews and approvals, and that our product candidates that we are developing or may develop may not demonstrate success in clinical trials. Prospective investors are cautioned not to place undue reliance on these forward-looking statements, which speak only as of the date hereof. C4 Therapeutics, Inc. undertakes no obligation to update or revise the information contained in this presentation, whether as a result of new information, future events or circumstances or otherwise.

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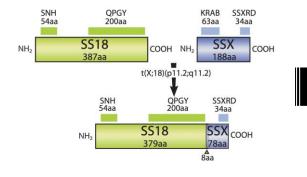


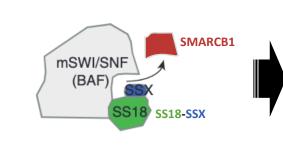
### Synovial sarcoma

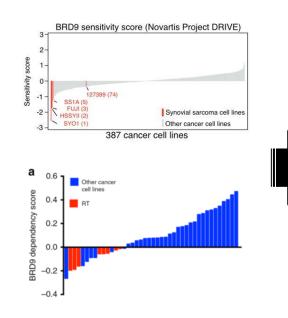


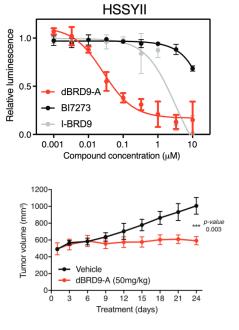
#### Lack of effective treatment strategies for metastatic disease or reoccurrence following surgery











**BRD9 degradation** Targeted protein degradation is an effective therapeutic strategy

**SS18-SSX fusion** Defining feature that underlies synovial sarcoma pathogenesis

#### **SMARCB1** eviction

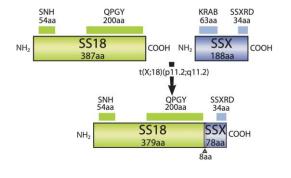
Incorporation of the SS18-SSXX fusion ejects SMARCB1 from the BAF complex

**BRD9 dependency** Loss of SMARCB1 results in a synthetic lethal relationship with BRD9

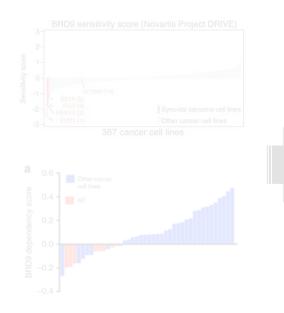


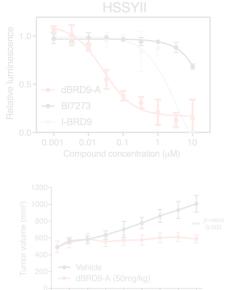
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Kadoch & Crabtree., 2013 McBride et al., 2018









**SS18-SSX fusion** Defining feature that underlies synovial sarcoma pathogenesis **SMARCB1 eviction** Incorporation of the SS18-SSXX fusion ejects SMARCB1 from the BAF complex

**BRD9 dependency** Loss of SMARCB1 results in a synthetic lethal relationship with BRD9 **BRD9 degradation** Targeted protein degradation is an effective therapeutic strategy



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Kadoch & Crabtree., 2013 McBride et al., 2018 Michel et al., 2018 Wang et al., 2019 Briens et al., 2018

### Synovial sarcoma

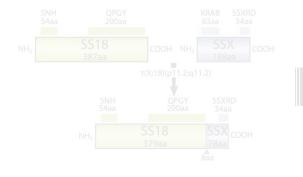
#### SS18-SSX fusion

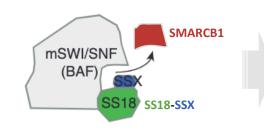
- Non-random chromosomal translocation t(X:18; p11:q11)
- Bona fide driver of pathogenesis
- SS18
  - Epigenetic chromatin regulator
    - Member of the BAF chromatin remodeling complex
- SSX
  - Potent transcriptional repressor via its KRAB domain (not included within the fusion)

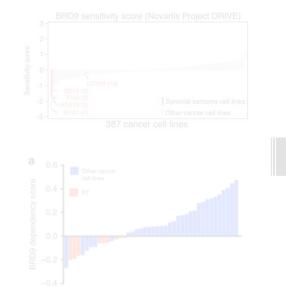
## SS18 SNH QPGY SSX KRAB DD RD SNH QPGY DD RD SS18-SSX SS18-SSX Generative Starses Baranov et al., 2020

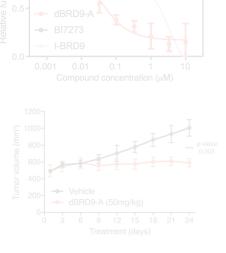
#### SS18-SSX fusion is the defining molecular feature of synovial sarcoma











**BRD9 degradation** Targeted protein degradation is an effective therapeutic strategy

**SS18-SSX fusion** Defining feature that underlies synovial sarcoma pathogenesis

#### **SMARCB1 eviction** Incorporation of the SS18-SSXX fusion ejects SMARCB1 from the BAF complex

**BRD9 dependency** Loss of SMARCB1 results in a synthetic lethal relationship with BRD9



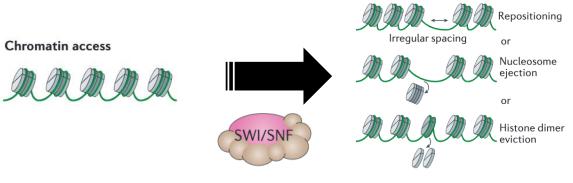
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Kadoch & Crabtree., 2013 McBride et al., 2018 Michel et al., 2018 Wang et al., 2019 Briens et al., 2018

### BAF complexes are critical regulators of chromatin state

# BAF (Brg/Brahma associated factors) or mSWI/SNF complexes

- Multi sub-unit (~15 proteins) ATP dependent chromatin remodeling complexes
  - Compaction and decompaction of DNA in the nucleus
  - Enables replication, selective gene expression and repression



Adapted from Clapier et al., 2017

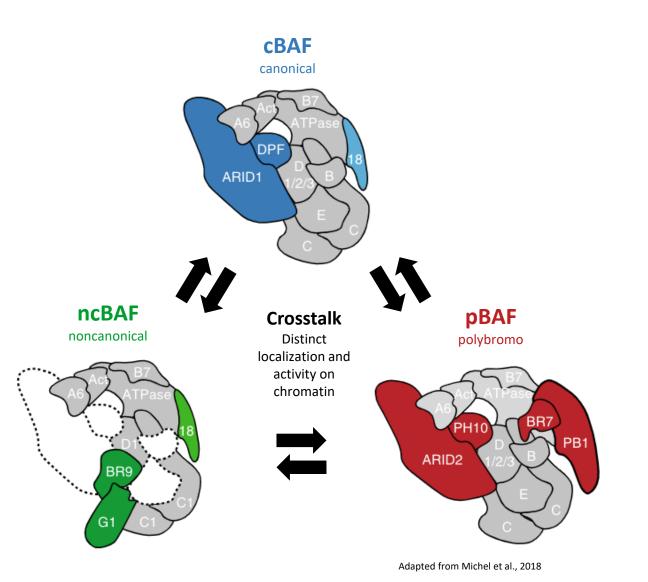


### Three versions of the BAF complex collectively regulate chromatin state

#### **BAF** complexes

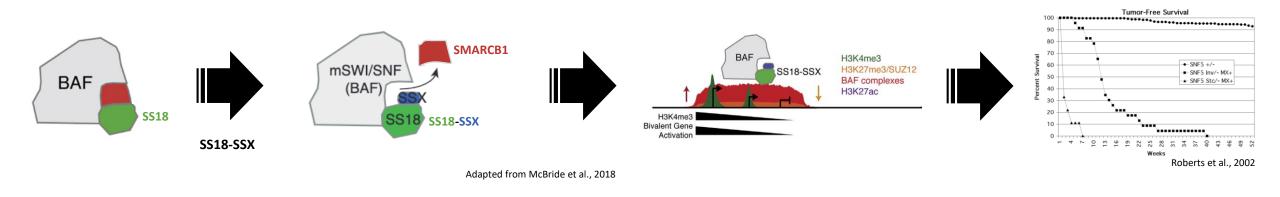
- Three distinct versions with unique subunit combinations
  - SS18  $\rightarrow$  ncBAF, cBAF
  - SMARCB1  $\rightarrow$  cBAF, pBAF
  - BRD9  $\rightarrow$  ncBAF

 Collaborative interplay between the complexes to regulate chromatin state



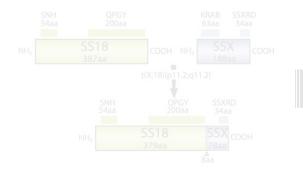


### SS18-SSX fusion incorporation into the BAF complex

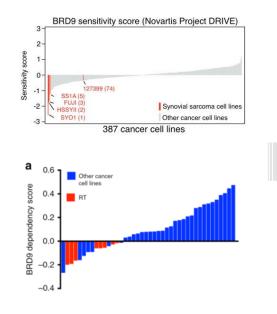


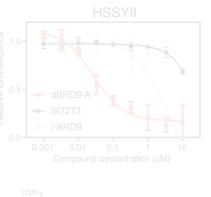
#### SS18-SSX fusion incorporation results in the ejection of SMARCB1, rendering the cBAF complex dysfunctional and driving an oncogenic state Redistribution of BAF complexes, aberrant chromatin structure, loss of SMARCB1 tumor suppressor function

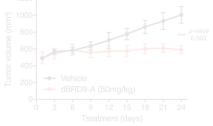












**BRD9 degradation** Targeted protein degradation is an effective therapeutic strategy

**SS18-SSX fusion** Defining feature that underlies synovial sarcoma pathogenesis SMARCB1 eviction Incorporation of the SS18-SSXX fusion tiects SMARCB1 from the BAF complex

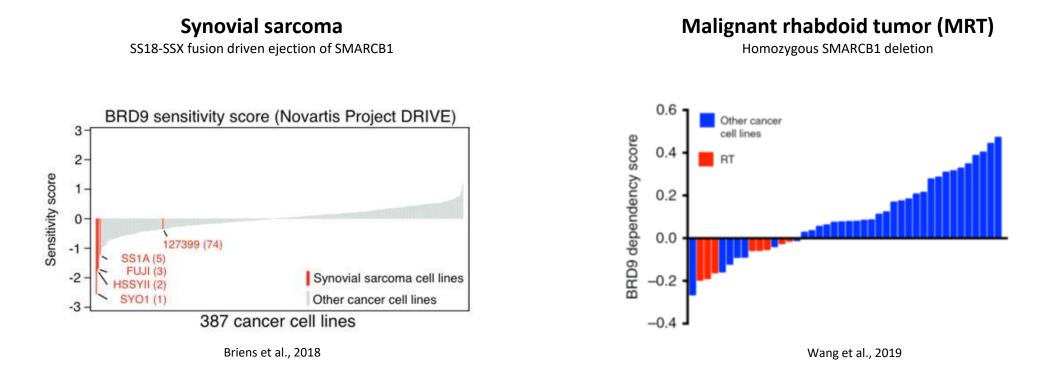
#### **BRD9 dependency** Loss of SMARCB1 results in a synthetic lethal relationship with BRD9



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Kadoch & Crabtree., 2013 McBride et al., 2018 Michel et al., 2018 Wang et al., 2019 Briens et al., 2018

### BRD9 is a selective dependency in SMARCB1 perturbed contexts



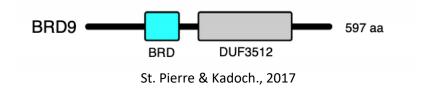
# Genome-wide loss of function CRISPR screens identify BRD9 as a unique dependency in synovial sarcoma and malignant rhabdoid tumor cell lines

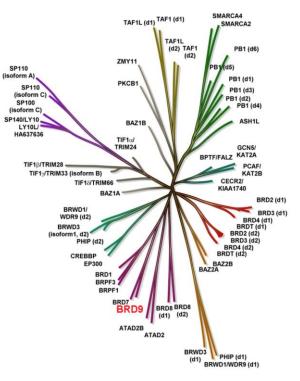


### Targeting aberrant BAF complexes via BRD9 degradation

#### BRD9

- Bromodomain containing protein 9
  - Alternate names
    - Sarcoma antigen NY-SAR-29
    - Rhabdomyosarcoma antigen MU-RMS-40.8
- Small and compact with two annotated domains
  - Bromodomain: acetyl lysine reader function
  - DUF3512 domain: mediates incorporation into the BAF complex
- BRD9 is *selectively* incorporated into the ncBAF complex

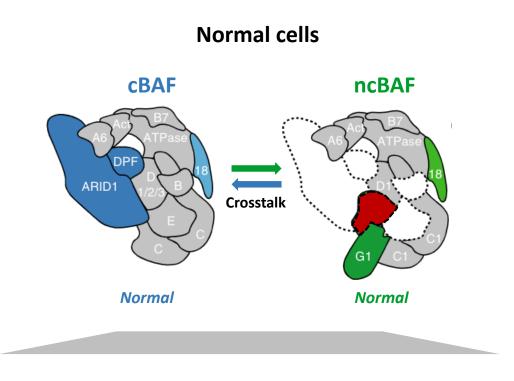








### BRD9 dependency in synovial sarcoma



Normal chromatin structure
Wild t Normal cells spared

4 Therapeutics

### CBAF SS18-SSX fusion ARDD Crosstalk \*\*Compromised\*\* Crosstalk \*\*Aberrant\*\*

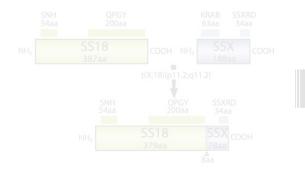
Synovial sarcoma cells

Anti-tumor response via eliminating oncogenic ncBAF activity in BAF perturbed state

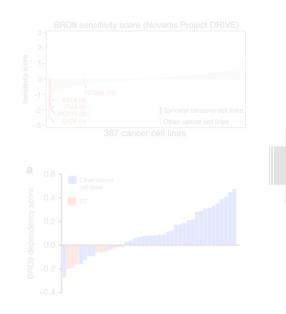
#### Target rationale: synovial sarcoma tumors are uniquely dependent on BRD9 (synthetic lethal) and degradation is a safe and effective targeted therapy

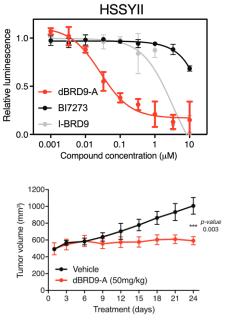
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Adapted from Michel et al., 2018









**BRD9 degradation** Targeted protein degradation is an effective therapeutic strategy

**SS18-SSX fusion** Defining feature that underlies synovial sarcoma pathogenesis **SMARCB1 eviction** Incorporation of the SS18-SSXX fusion elects SMARCB1 from the BAF complex

**BRD9 dependency** Loss of SMARCB1 results in a synthetic lethal relationship with BRD9



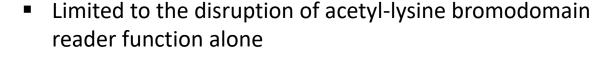
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Kadoch & Crabtree., 2013 McBride et al., 2018

### Targeted protein degradation of BRD9 is an effective therapeutic strategy



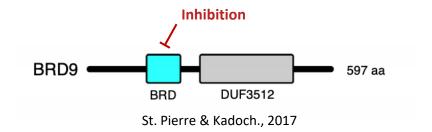
Small molecule inhibition of BRD9 is ineffective

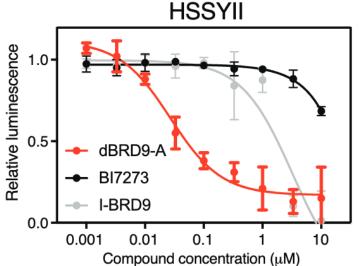




0.5 dBRD9-A Maximal disruption of the ncBAF complex oncogenic BI7273 I-BRD9 0.0 0.001 0.01 0.1

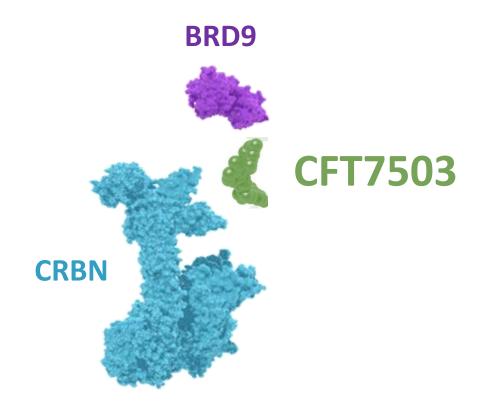








### Opportunity to develop a first and best-in-class BRD9 degrader



#### **Degradation activity**

- Potent
- Selective
- Complete
- Durable

#### **Complete disruption of oncogenic BRD9/ncBAF activity**

- Selective *in vitro* growth inhibitory activity in human synovial sarcoma cell lines
- Complete tumor growth inhibition across CDX and PDX models of synovial sarcoma

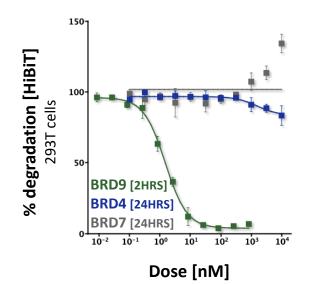
#### Enabling pharmacokinetic profile and drug properties

- Oral dosing
- Dosing frequency flexibility

<u>Note</u>: CFT7503 is the parent compound of CFT8634, C4 Therapeutics' lead compound for BRD9.

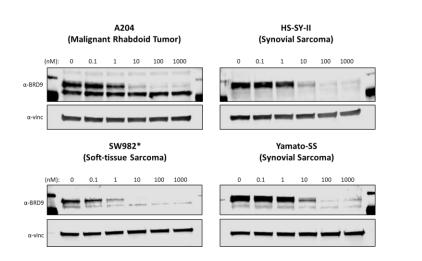


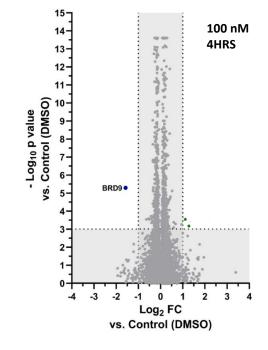
### Cellular degradation activity





Engineered 293T HiBiT cell lines





Degradation across cellular contexts

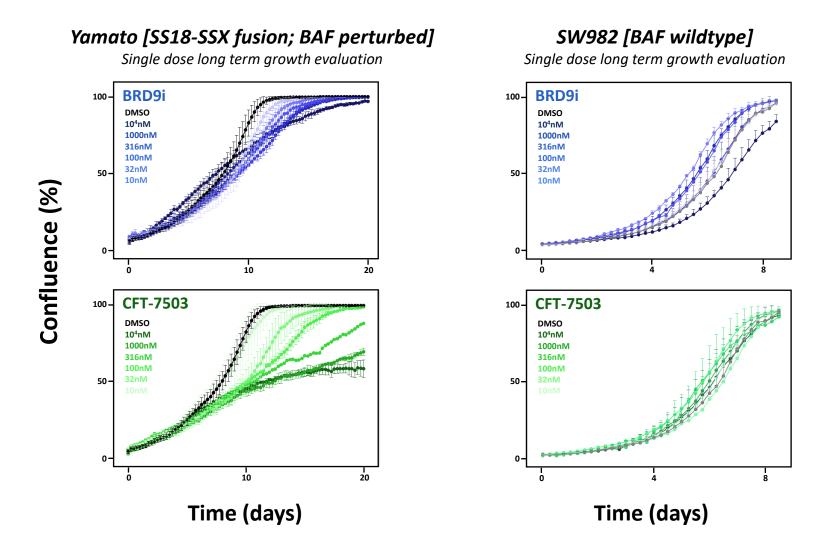
Endogenous degradation across representative cellular contexts



#### Potent, complete, selective, and durable dose responsive BRD9 degradation



### Cellular consequences of BRD9 degradation

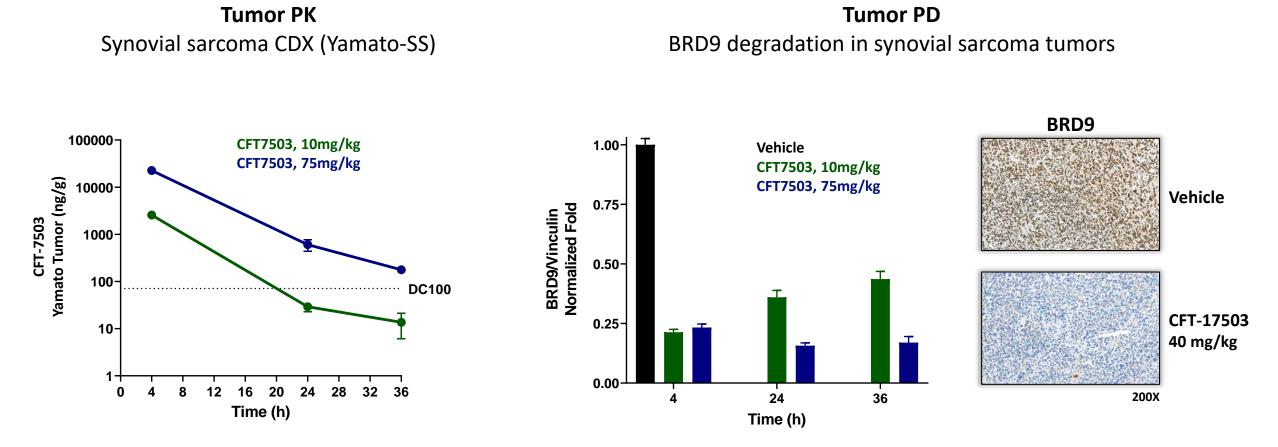


Degradation induced selective growth inhibition in BAF perturbed synovial sarcoma cells



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### In vivo properties – pharmacokinetics (PK) and pharmacodynamics (PD)



CFT7503 induces deep and durable BRD9 degradation upon oral administration in a xenograft model of synovial sarcoma



### In vivo activity – efficacy in synovial sarcoma

Efficacy Synovial sarcoma CDX (Yamato-SS) 3000-SEM Vehicle Vehicle 20 -CFT7503, 6mg/kg (PO QD) CFT7503, 6mg/kg (PO QD) Yamato-SS Mean Tumor Volume (mm<sup>3</sup>) + CFT7503, 17mg/kg (PO QD) CFT7503, 17mg/kg (PO QD) 2500-CFT7503, 50mg/kg (PO QD) CFT7503, 50mg/kg (PO QD) %Body Weight Change 10-2000-1500-1000--10-500--20 0 14 21 0 14 **Days of Treatment** 

#### **Tolerability** Synovial sarcoma CDX (Yamato-SS)

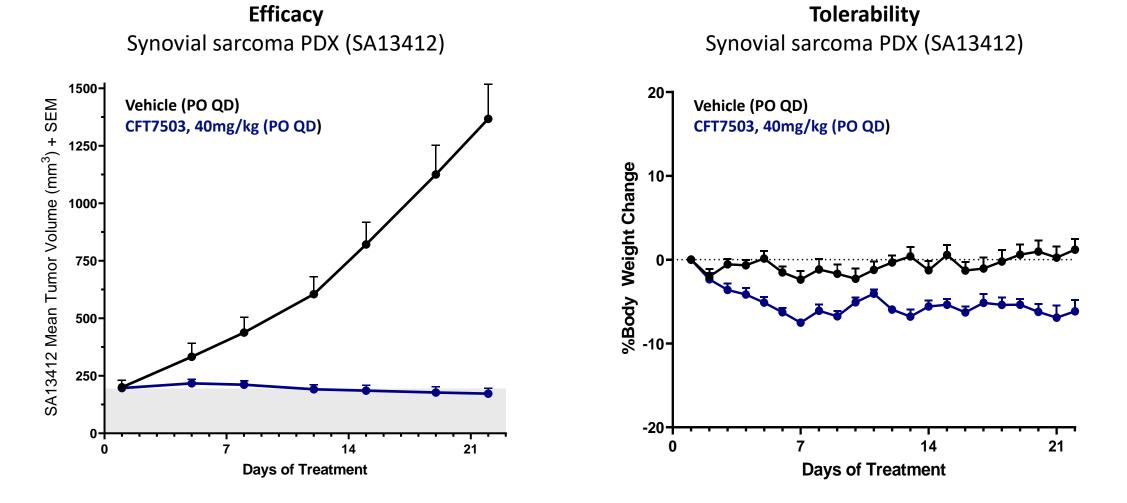
**Days of Treatment** 

CFT7503 demonstrates dose dependent efficacy in synovial sarcoma and is well tolerated



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### In vivo activity – efficacy in synovial sarcoma

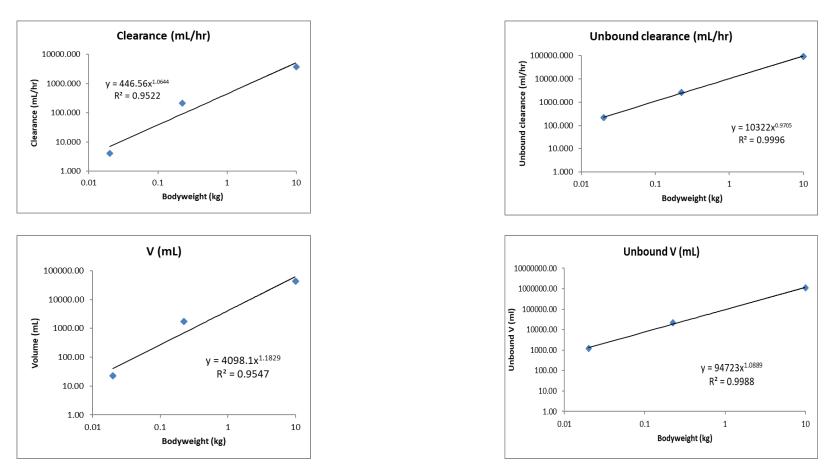


CFT7503 is efficacious in an adult patient derived xenograft (PDX) model of synovial sarcoma



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### Cross-species pharmacokinetic profiles



#### CLEARANCE

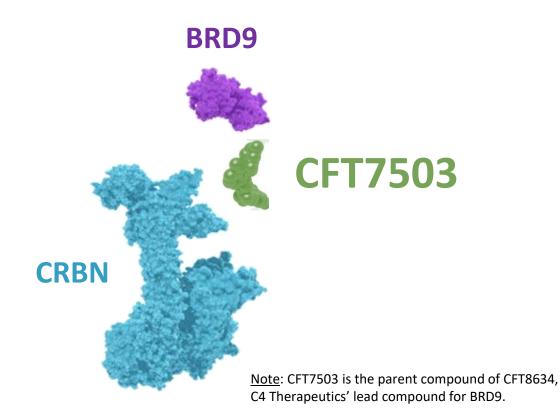
VOLUME

#### Concordant cross-species PK profiles enable confident and favorable human dose predictions



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### Opportunity to develop a first and best-in-class BRD9 degrader



#### Degradation activity 🗸

- Potent
- Selective
- Complete
- Durable

#### Complete disruption of oncogenic BRD9/ncBAF activity

- Selective *in vitro* growth inhibitory activity in human synovial sarcoma cell lines
- Complete tumor growth inhibition across CDX and PDX models of synovial sarcoma

#### Enabling pharmacokinetic profile and drug properties 🗸

- Oral dosing
- Dosing frequency flexibility

#### Potential for a safe and effective therapeutic agent with applicability across SMARCB1 deleted cancers Synovial sarcoma, malignant rhabdoid tumor, epithelioid sarcoma



### The C4 Therapeutics Team



