

VEGF-VEGFR Related *in vivo* Models



WuXi AppTec Research Service Division, Oncology & Immunology Unit



2021.09

OncoWuXi Newsletter

■ VEGF-VEGFR inhibitors in tumor models

- [SOC data in CDX models](#)
- [SOC data in PDX models](#)

Therapeutic Antibodies and Small Molecule Inhibitors in CDX Models

Cancer Type	Model ID	Drugs tested	Dosage	TGI (%)
CRC	HCT-15	Avastin 5-FU + Avastin	6 mg/kg, BIW 35 mg/kg, TIW + 6 mg/kg, BIW	61.1 69
	SW620	Avastin 5-FU + Avastin	6 mg/kg, BIW 35 mg/kg, TIW + 6 mg/kg, BIW	80 87.5
	LS174T	Avastin 5-FU + Avastin	6 mg/kg, BIW 20 mg/kg, QW + 6 mg/kg, BIW	61 62.4
	HT-29	Regorafenib	10 mg/kg, QD	87.7
Liver cancer	Huh7	Avastin	6 mg/kg, BIW	52.7
		Cisplatin + Avastin	3 mg/kg, QW + 6 mg/kg, BIW	83.9
		Sorafenib	30 mg/kg, QD	62.8
	BEL-7404	Avastin	6 mg/kg, BIW	54.9
		Cisplatin + Avastin	4 mg/kg, Q2W + 6 mg/kg, BIW	64.0
		Sorafenib	60 mg/kg, QD	78.0
	Hep-3B	Sorafenib	60 mg/kg, QD	70.0
	JHH-7	Sorafenib	30 mg/kg, QD	81.5

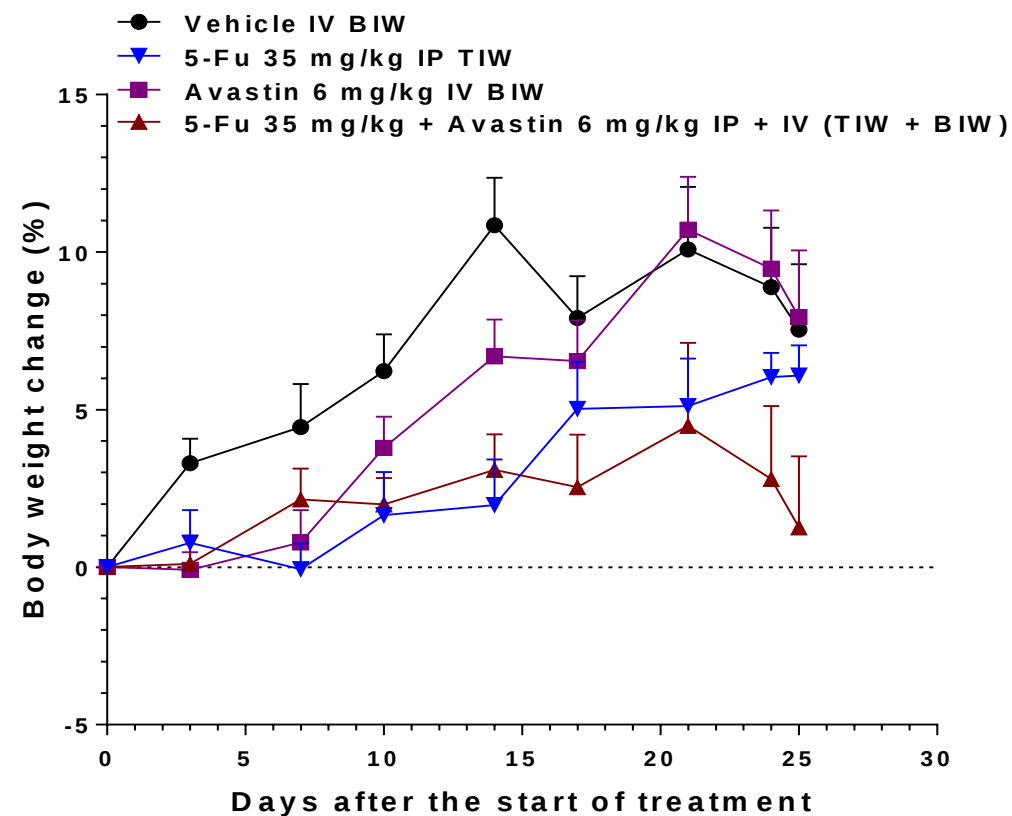
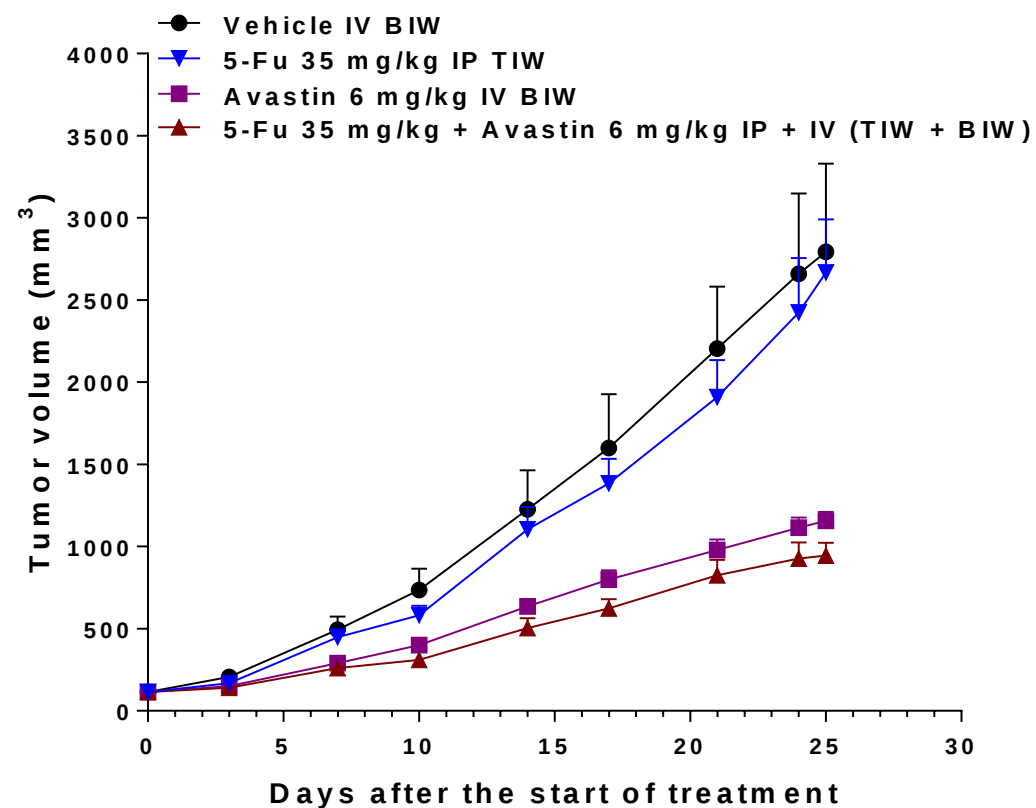
Therapeutic Antibodies and Small Molecule Inhibitors in CDX Models

Cancer Type	Model ID	Drugs tested	Dosage	TGI (%)
NSCLC	Calu-6	Nintedanib	50 mg/kg, QD 100 mg/kg, QD	83.5 93.5
	A549	Nintedanib	100 mg/kg, QD	80.6
	NCI-H520	Nintedanib Axitinib Sunitinib	100 mg/kg, QD 100 mg/kg, QD 80 mg/kg, QD	62 58 104
	PC-9	Apatinib	50 mg/kg, QD 100 mg/kg, QD	40.9 48.35
	NCI-H358	Avastin	0.5 mg/kg, TIW	72.87
Renal cancer	786-O	Sorafenib Sunitinib Malate Avastin	60 mg/kg (D0-7), 30 mg/kg (D8-16), QD 60 mg/kg, QD 6 mg/kg, BIW	76.0 88.4 47.7
	ACHN	Avastin	10 mg/kg, QW	25.9
Breast cancer	MCF-7	Avastin	10 mg/kg, QW	45.4
GBM	U87	Avastin	10 mg/kg, BIW	-
SCLC	NCI-H69	Anlotinib	1 mg/kg, QD 3 mg/kg, QD	54 99

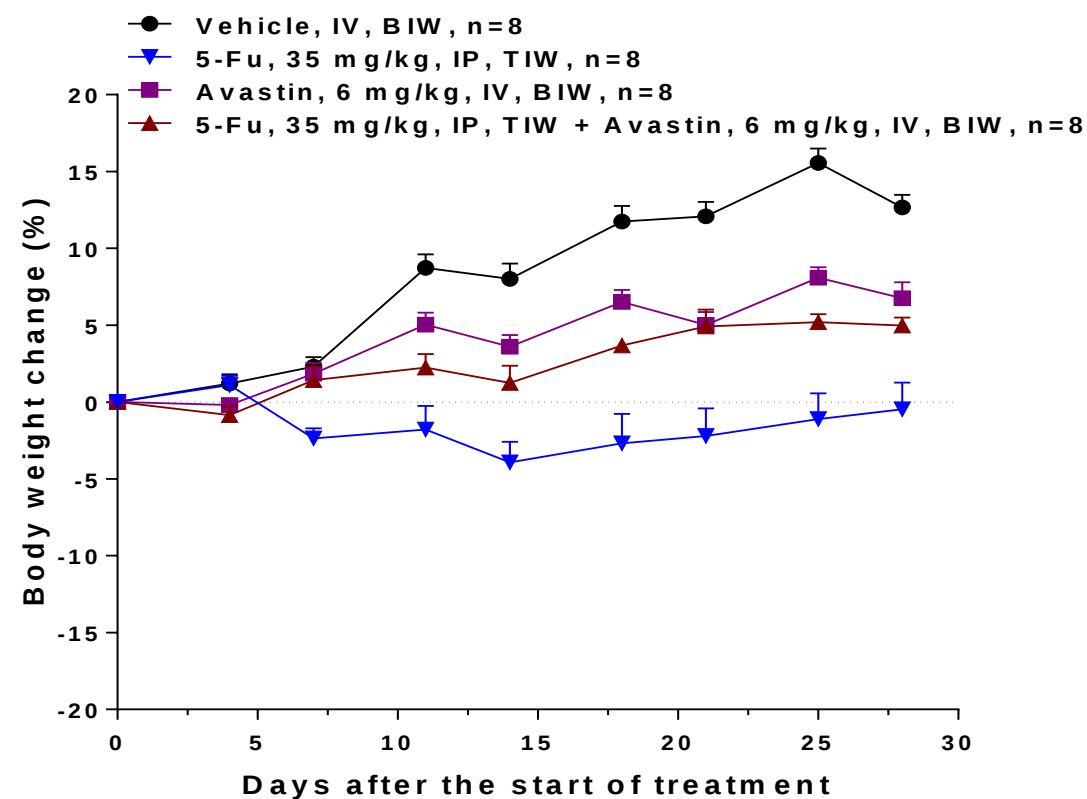
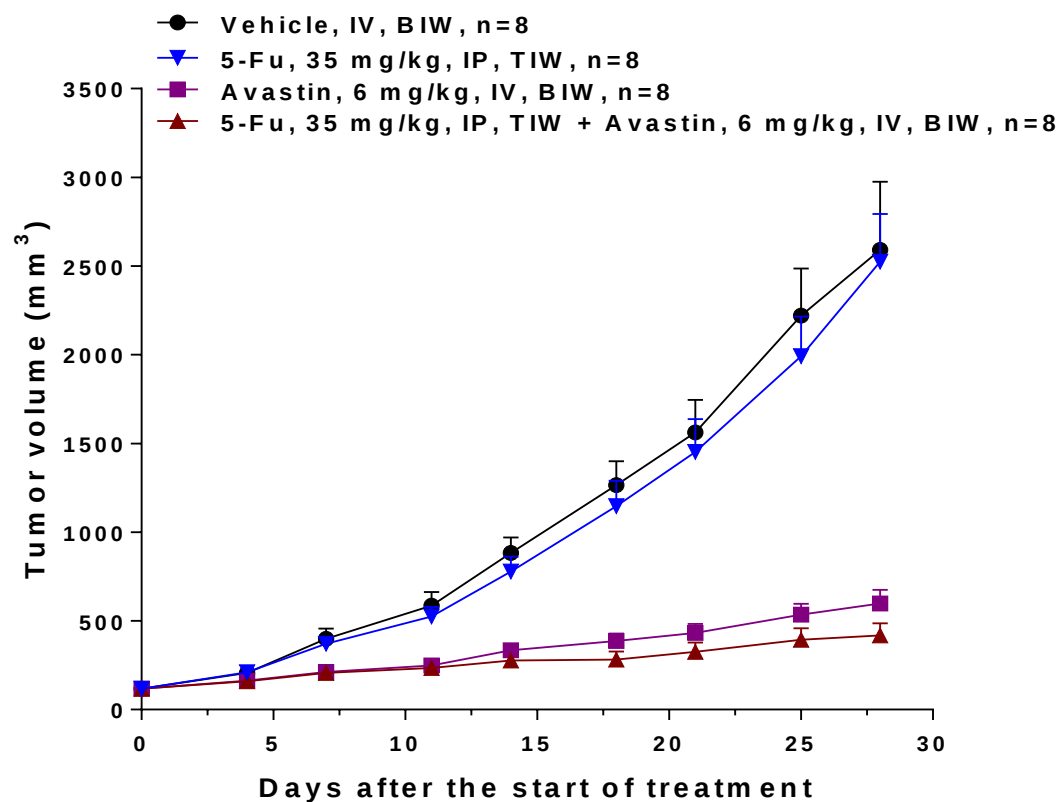
Therapeutic Antibodies and Small Molecule Inhibitors in CDX Models

Cancer Type	Model ID	Drugs tested	Dosage	TGI (%)
Gastric cancer	MKN-45	Sunitinib	20 mg/kg, QD	51.8
			40 mg/kg, QD	81.8
		Apatinib	100 mg/kg, QD	79.5
Thyroid cancer	FTC-238	Lenvatinib	30 mg/kg, QD	94.5

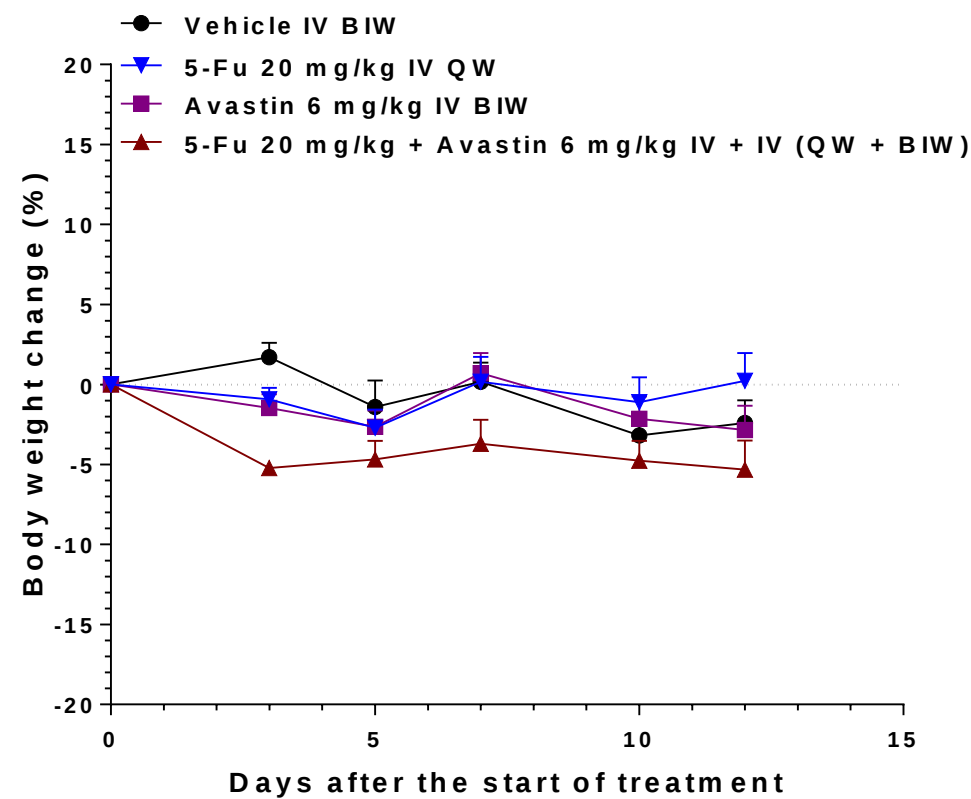
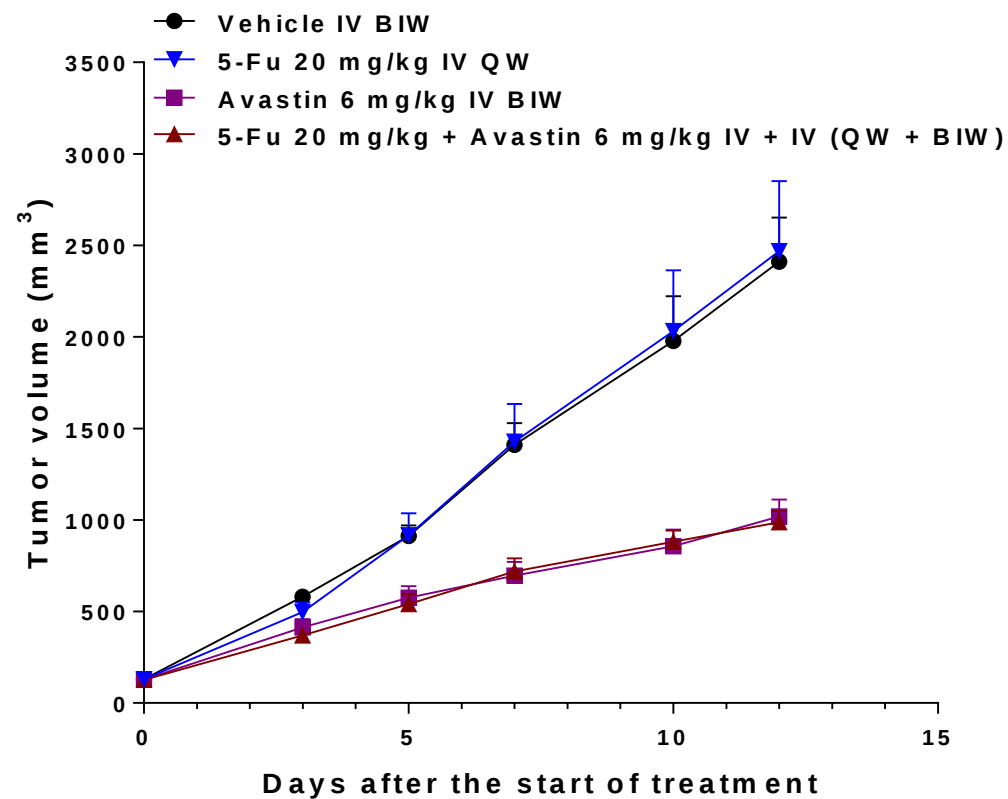
5-FU and Avastin in the HCT-15 Colorectal Cancer Model



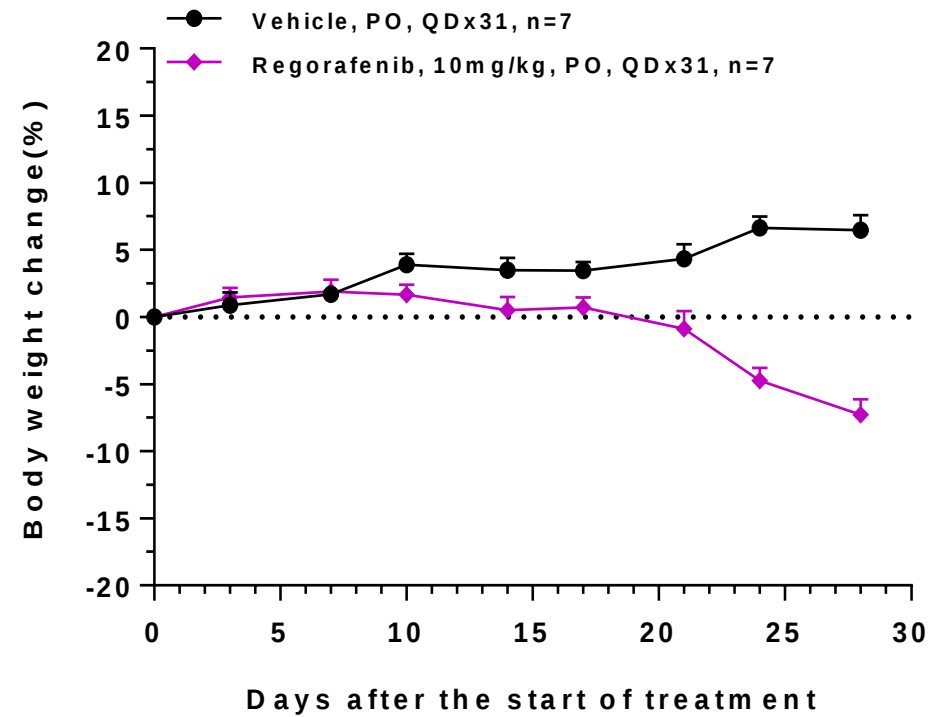
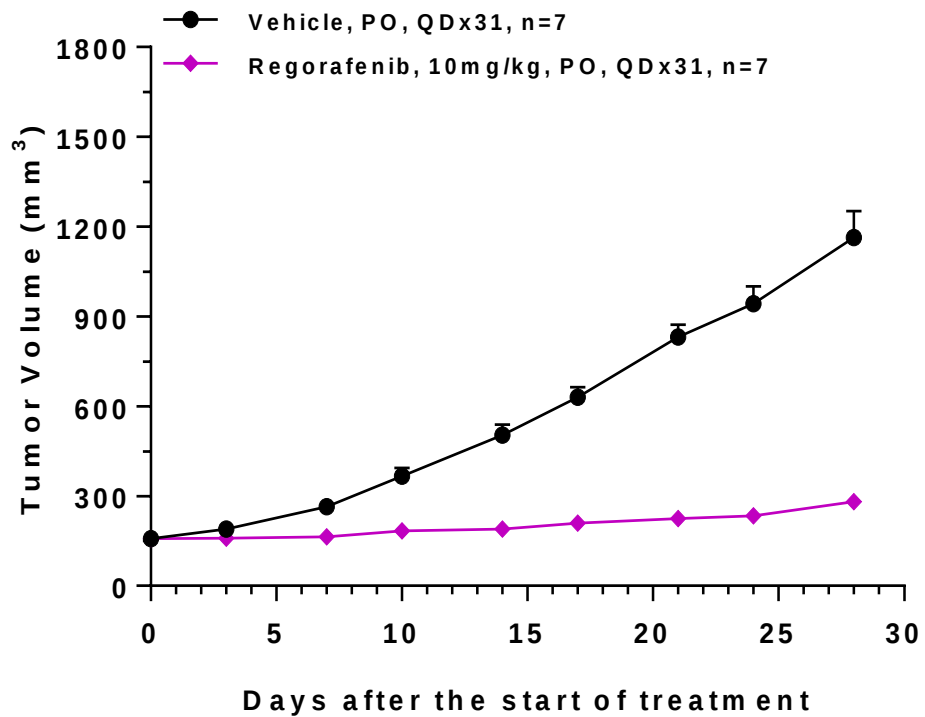
5-FU and Avastin in the SW620 Colorectal Cancer Model



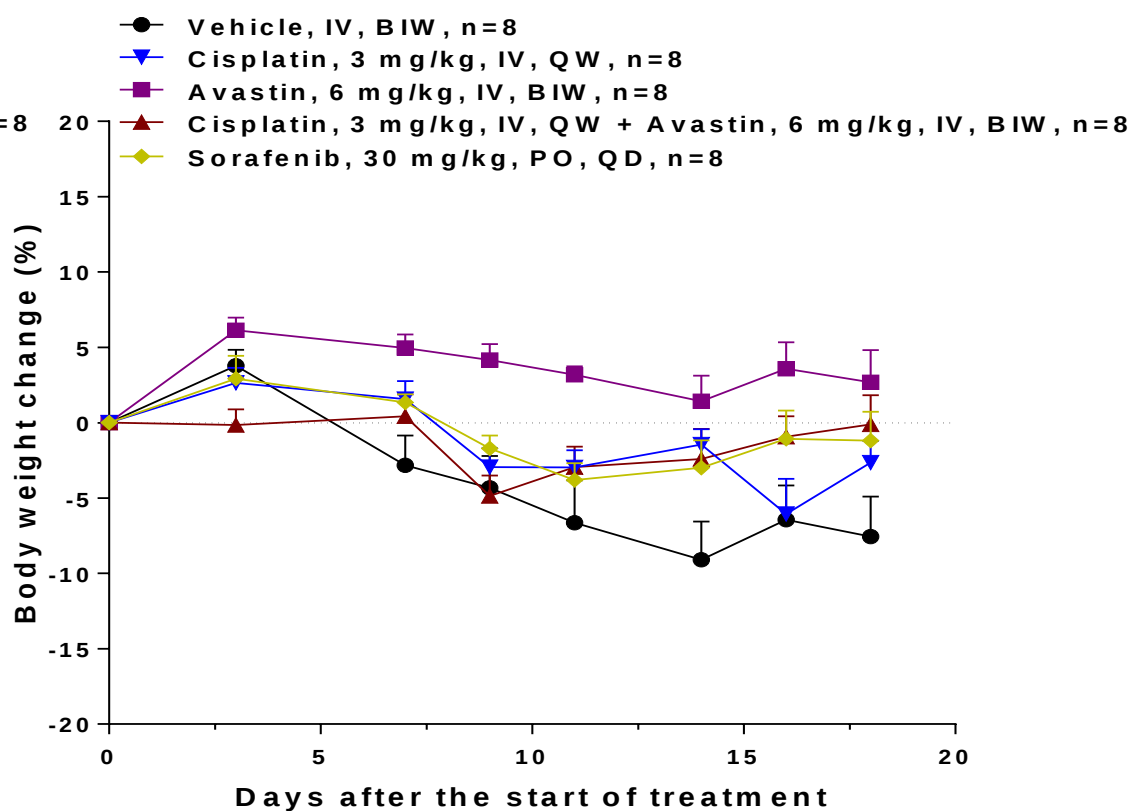
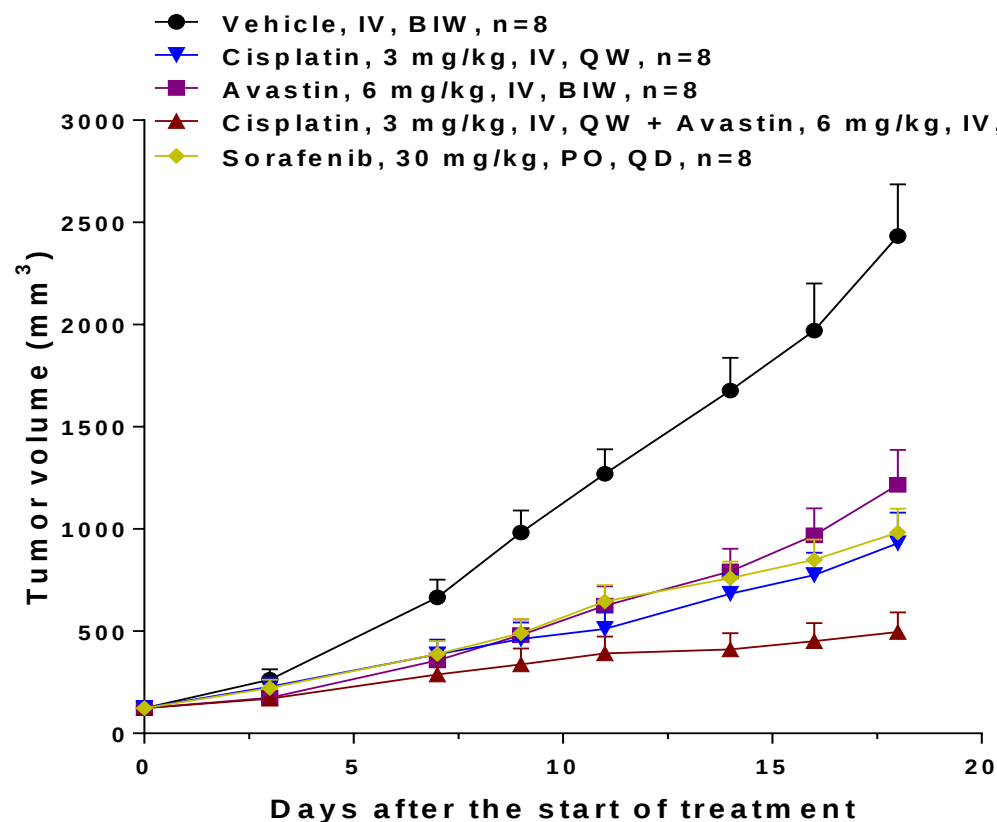
5-FU and Avastin in the LS174T Colorectal Cancer Model



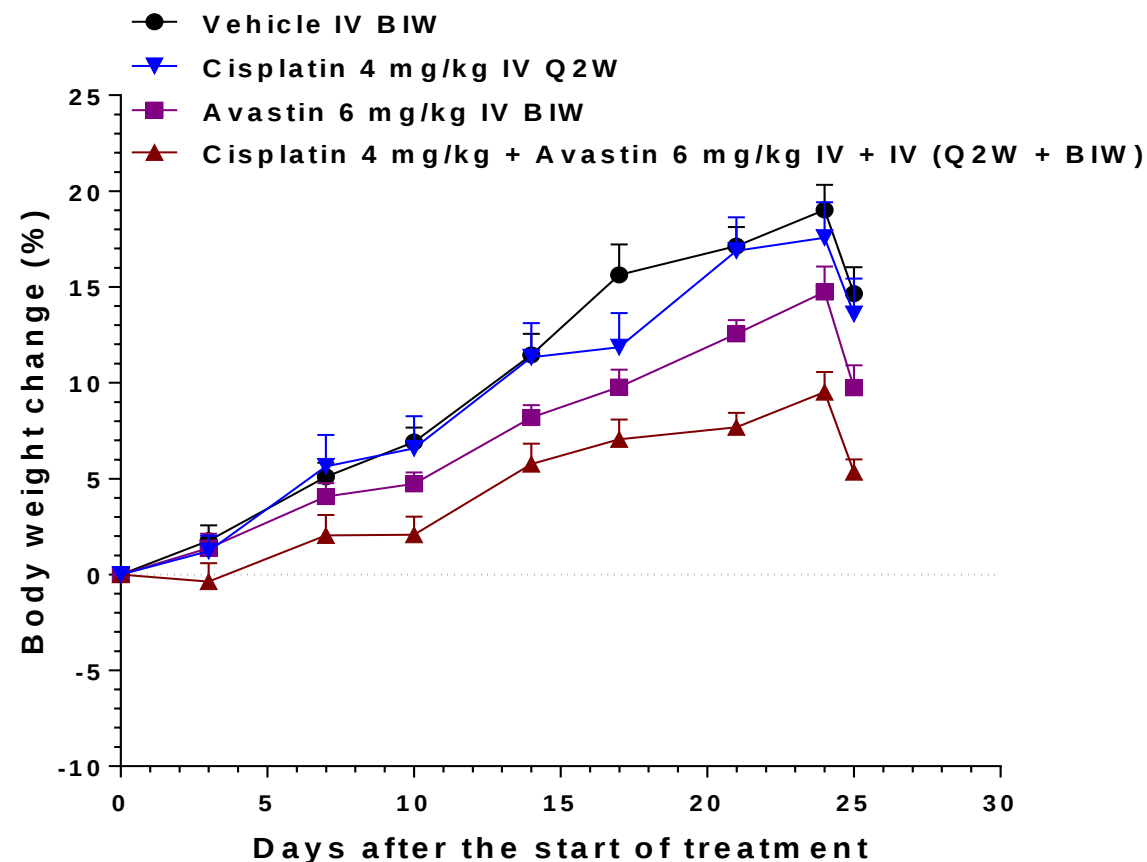
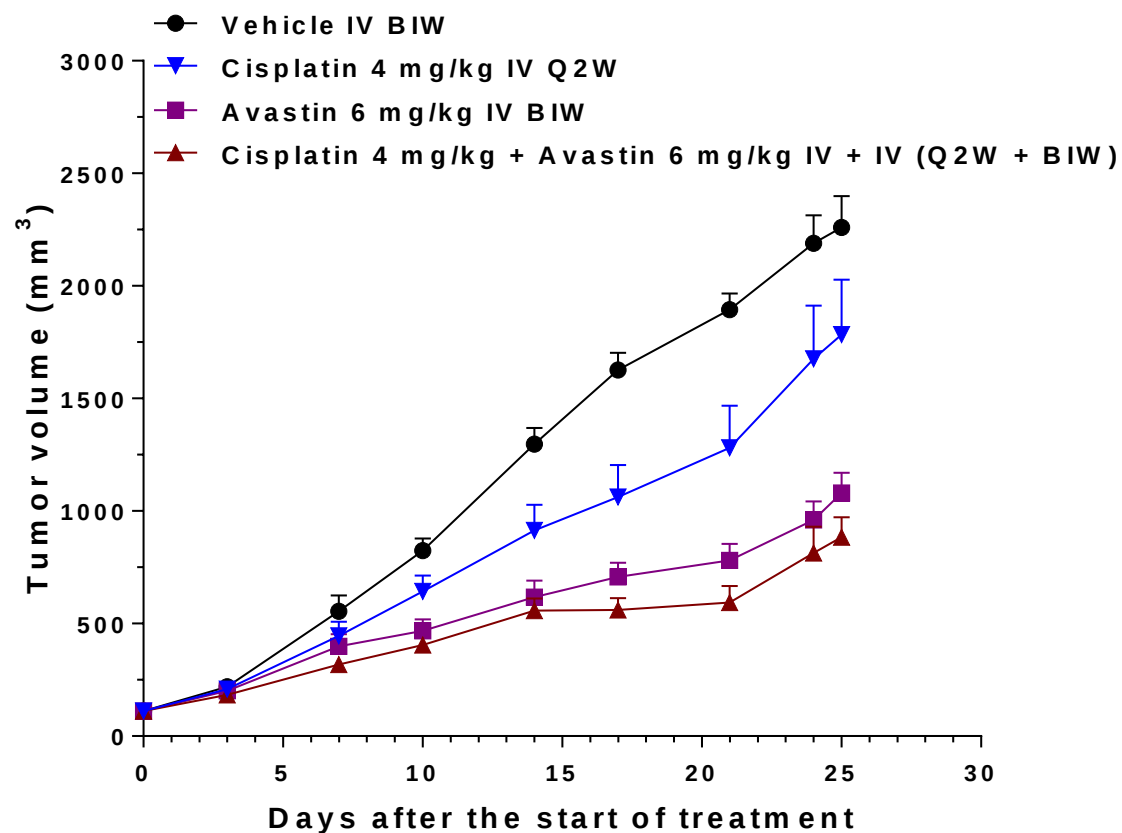
Regorafenib in the HT-29 Colorectal Cancer Model



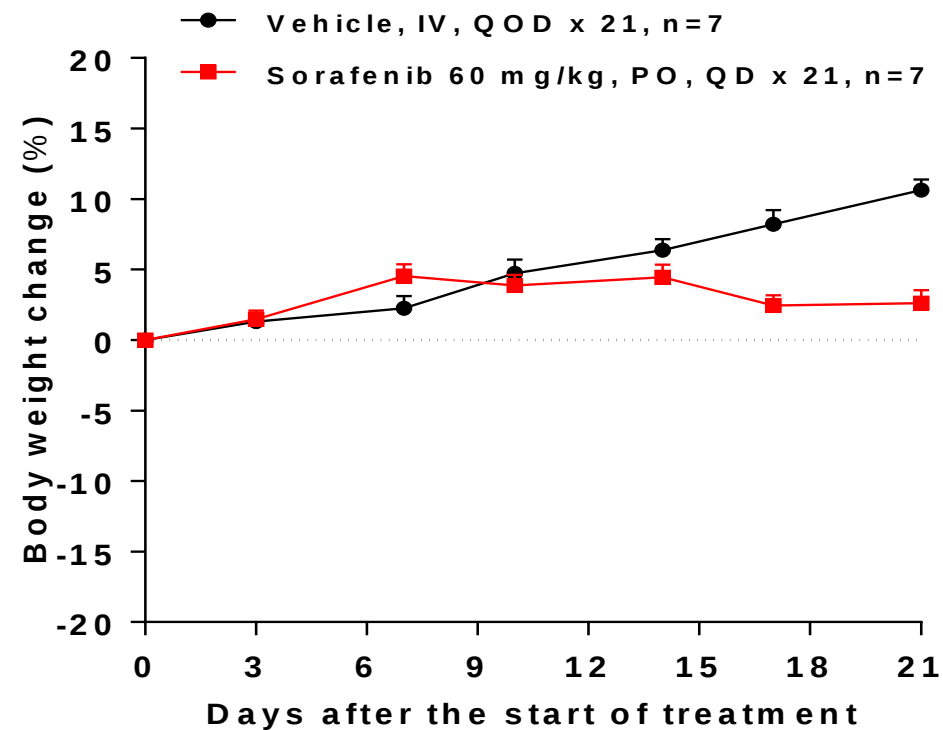
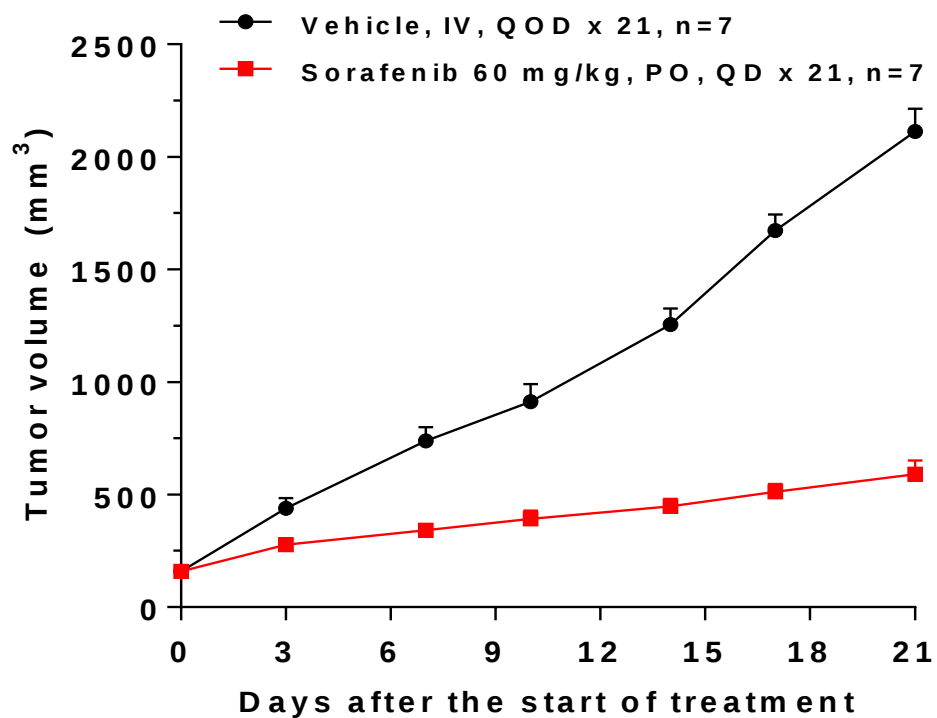
Cisplatin, Sorafenib and Avastin in the Huh7 Liver Cancer Model



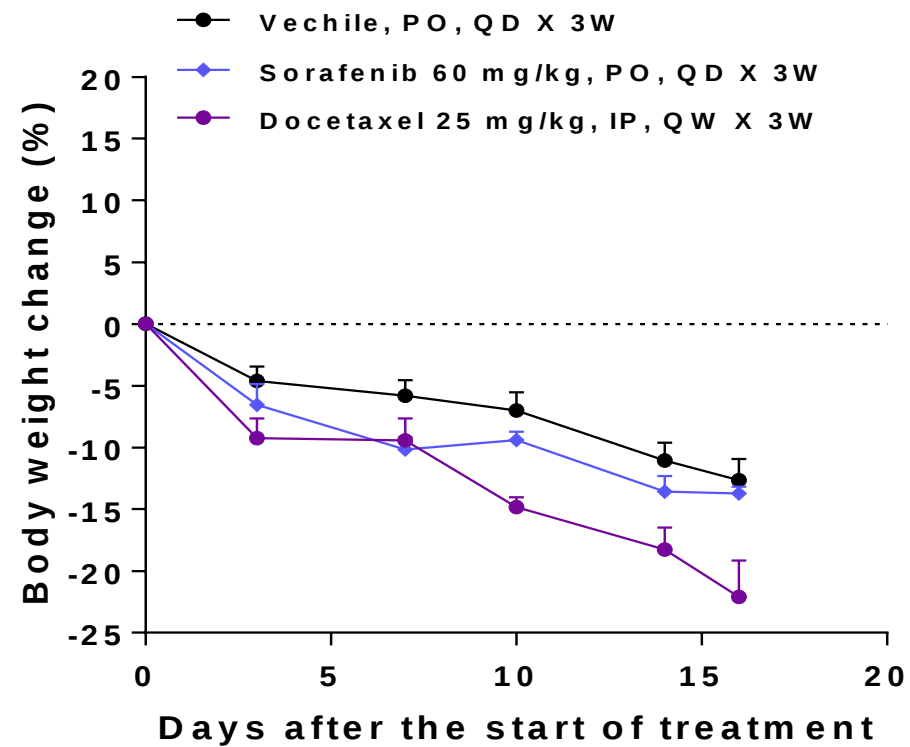
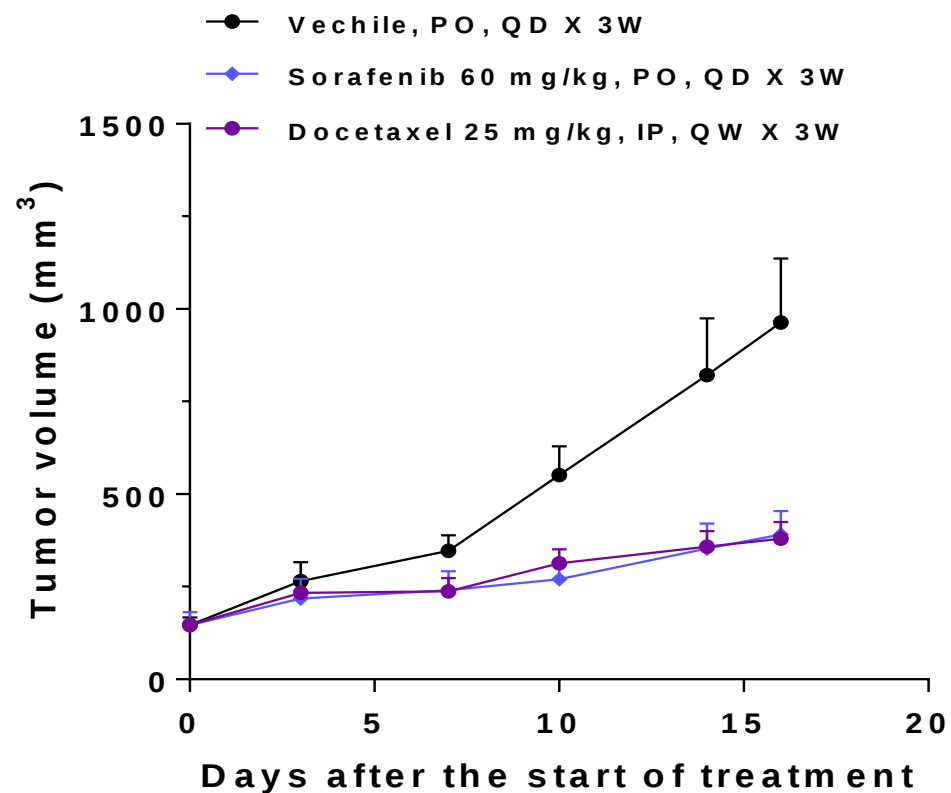
Cisplatin and Avastin in the BEL-7404 Human Liver Cancer Model



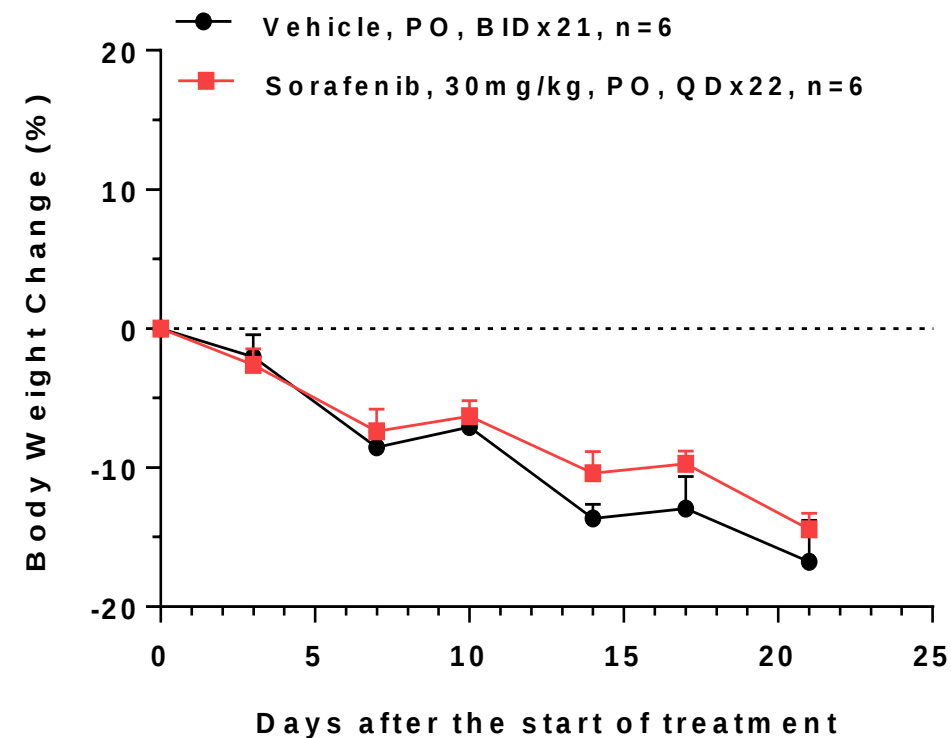
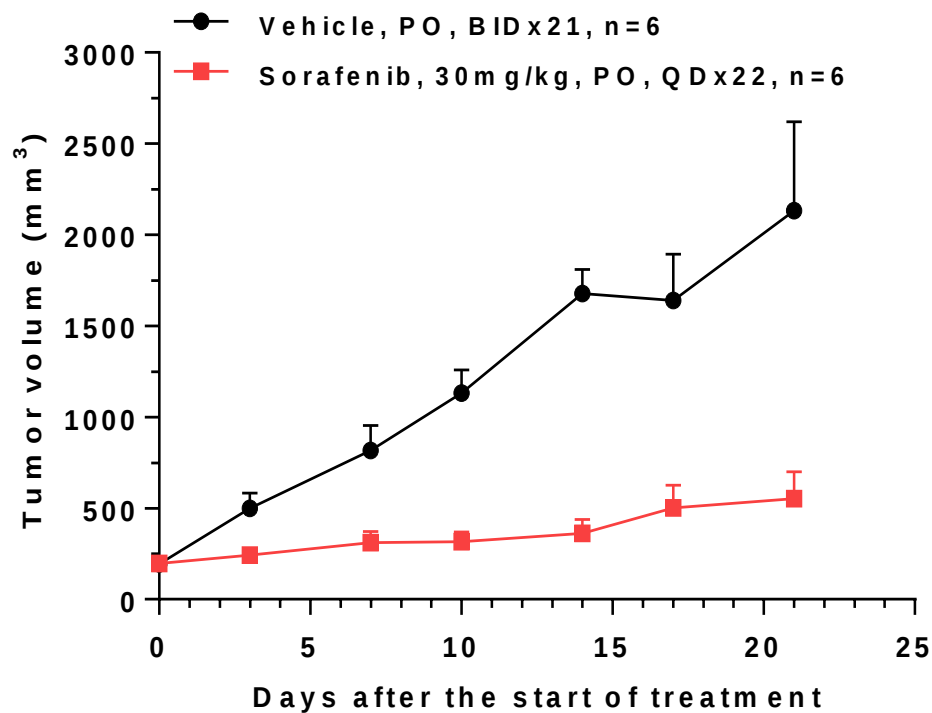
Sorafenib in the BEL-7404 Human Liver Cancer Model



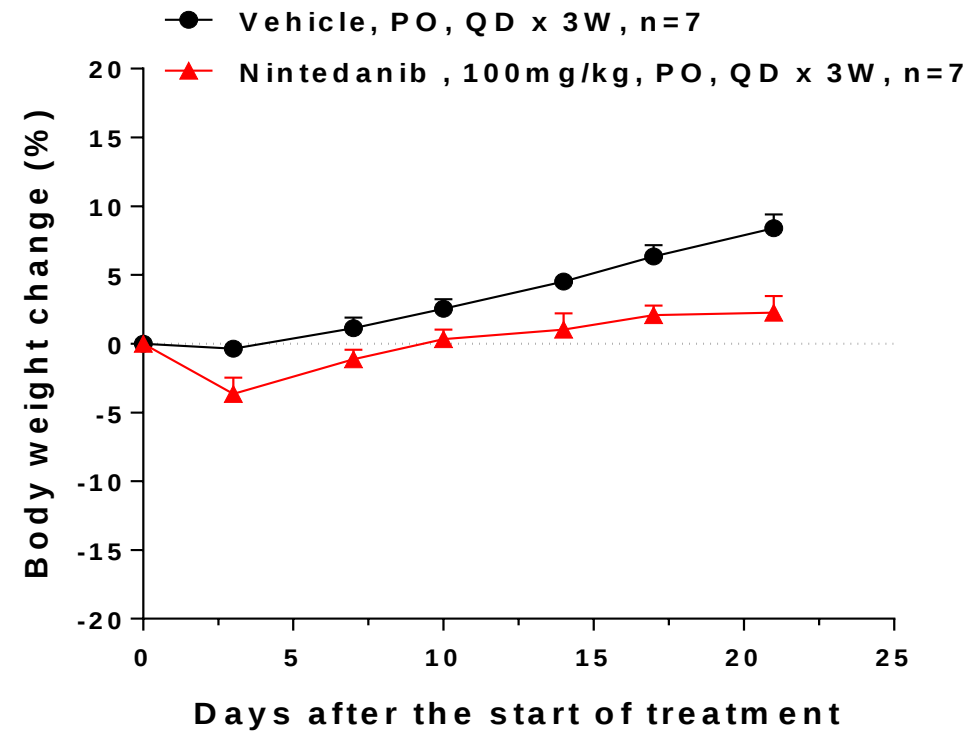
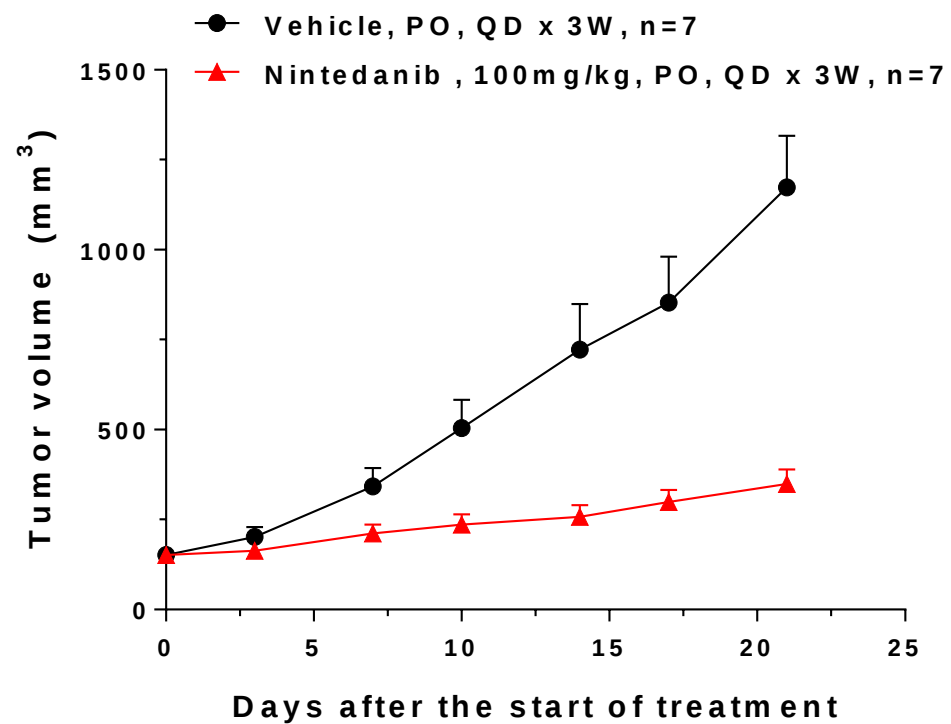
Sorafenib in the Hep3B Human Liver Cancer Model



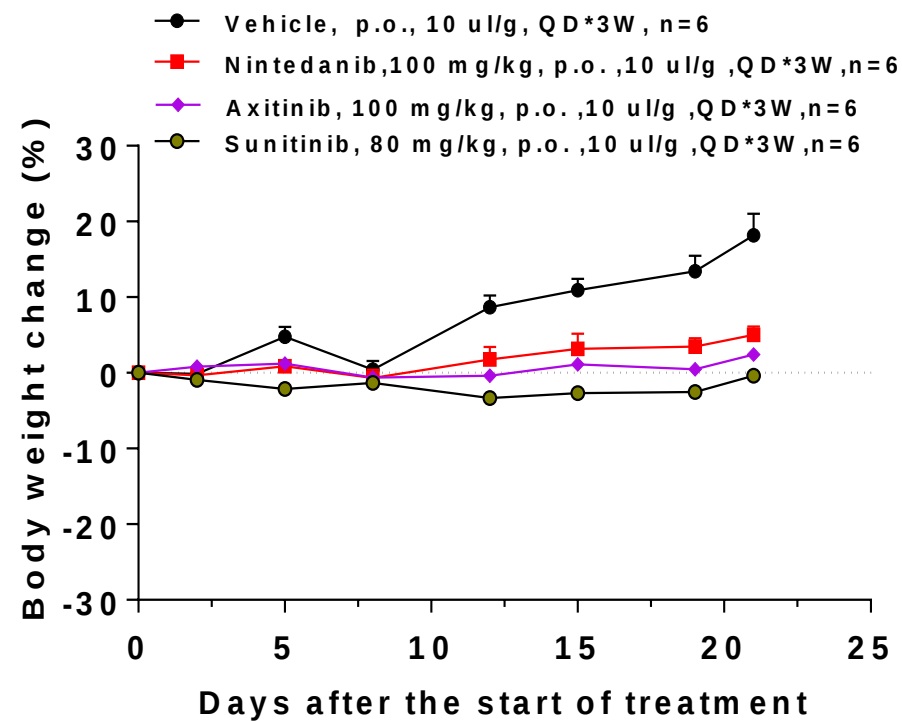
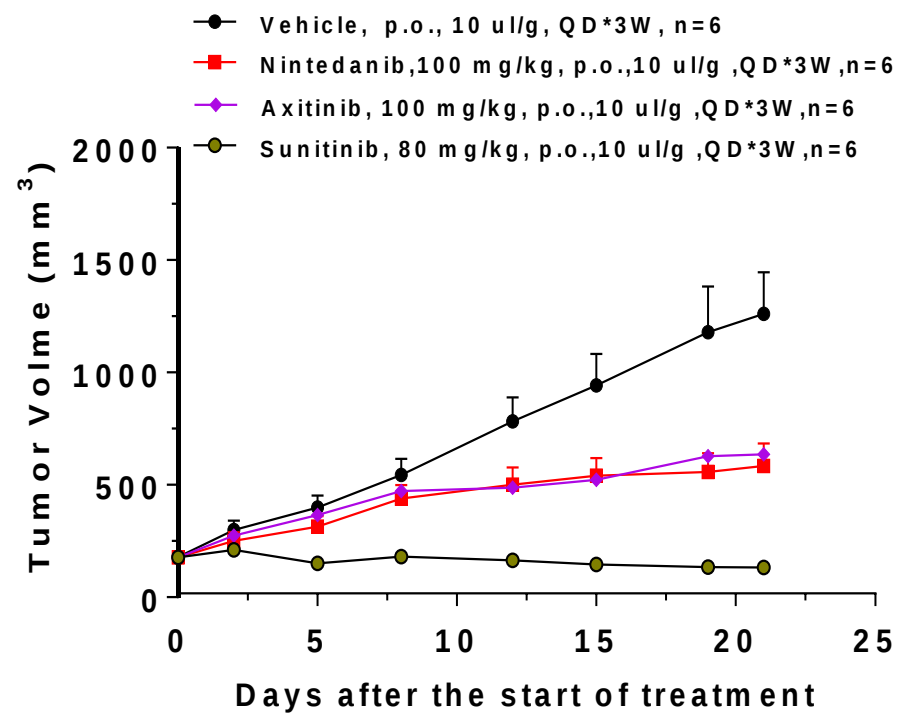
Sorafenib in the JHH-7 Human Liver Cancer Model



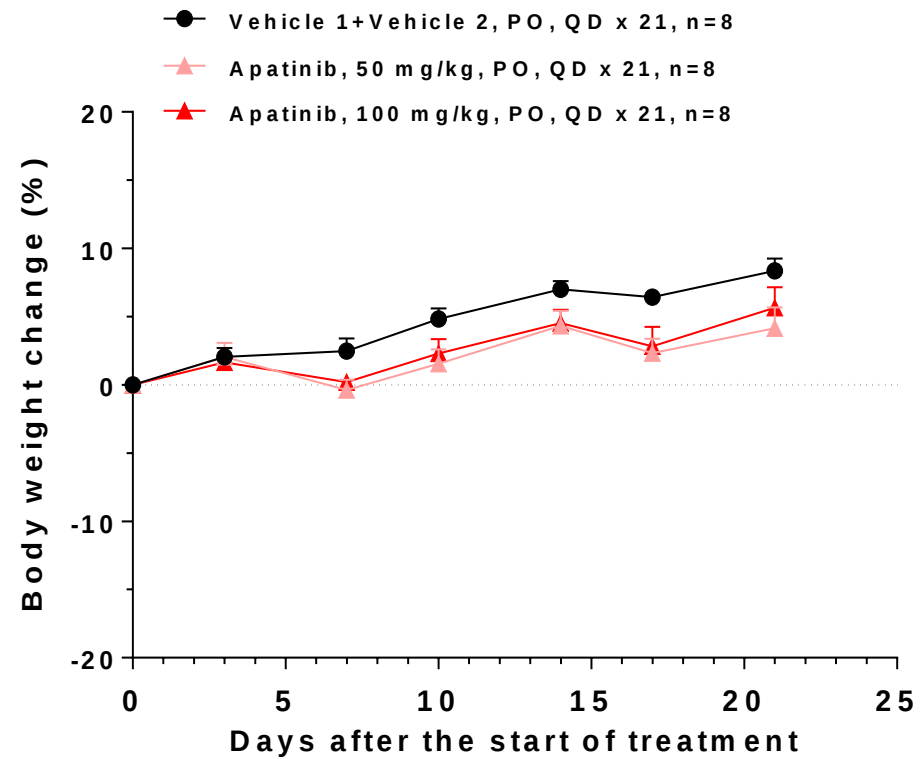
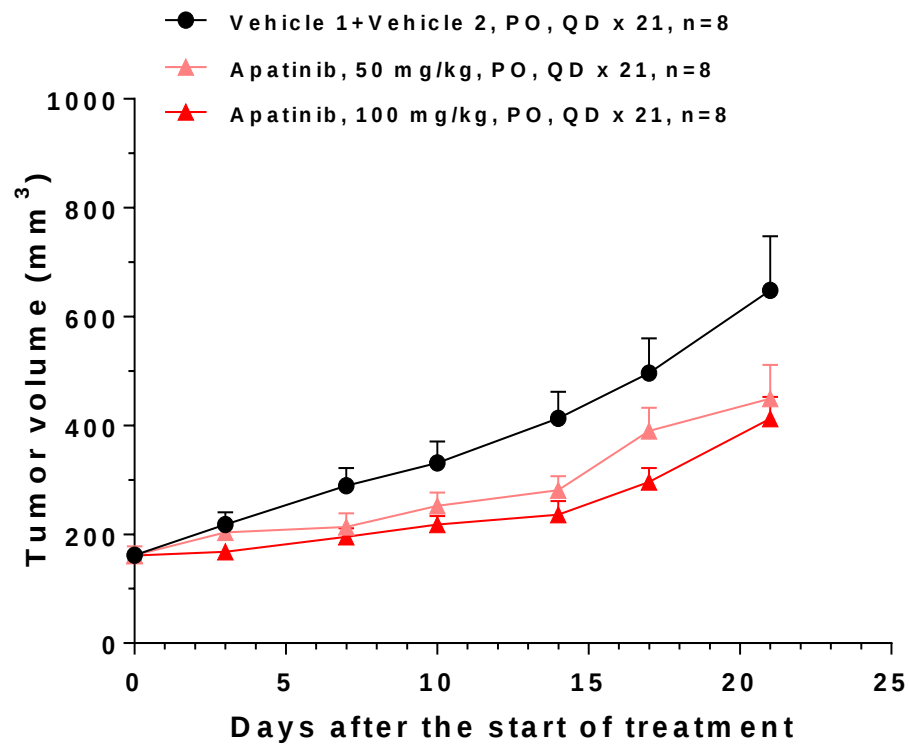
Nintedanib in the A549 NSCLC Adenocarcinoma Model



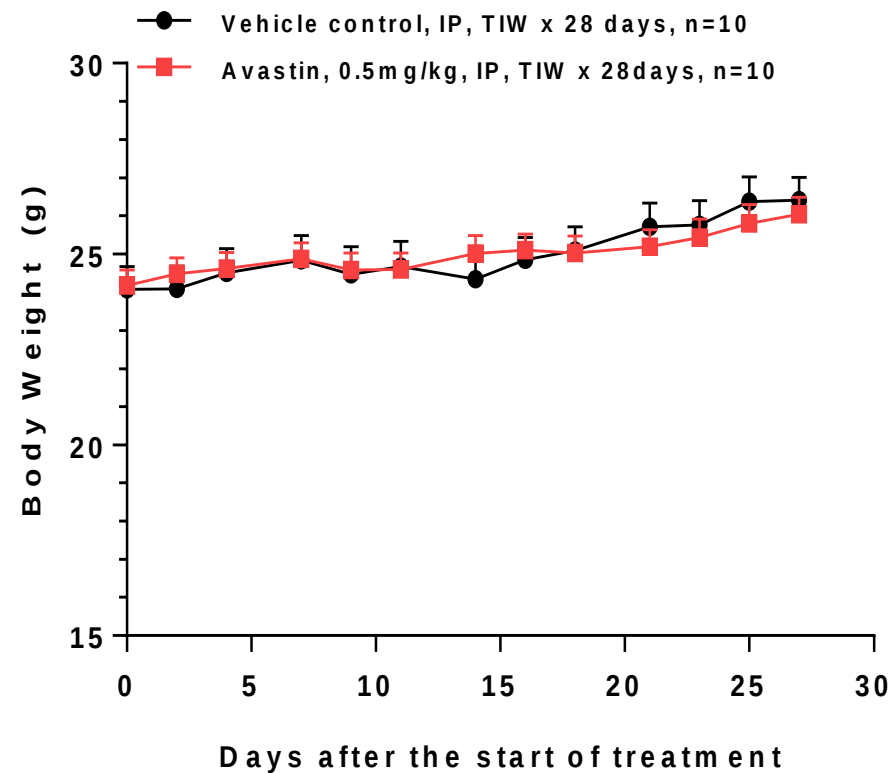
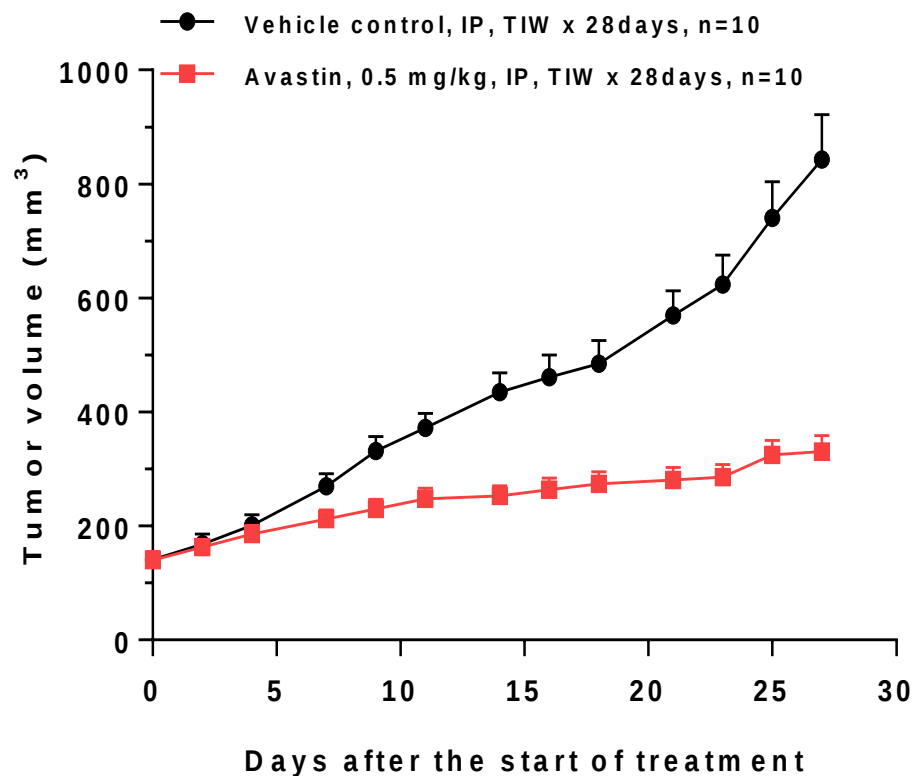
Nintedanib, Axitinib, Sunitinib in the NCI-H520 NSCLC Model



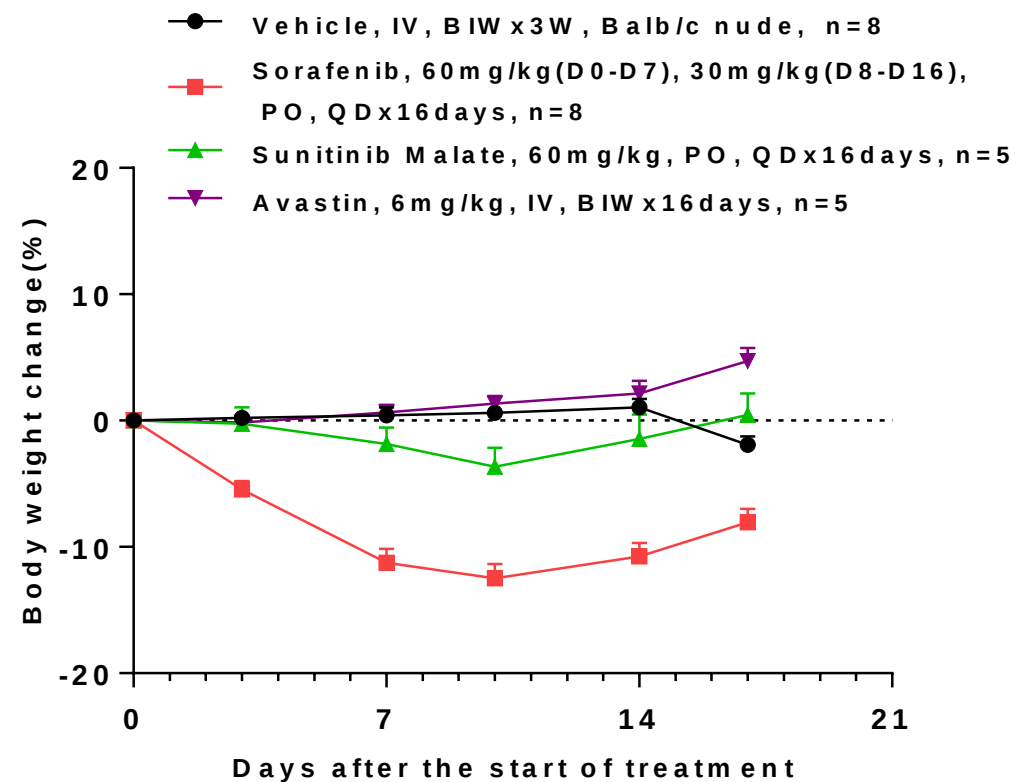
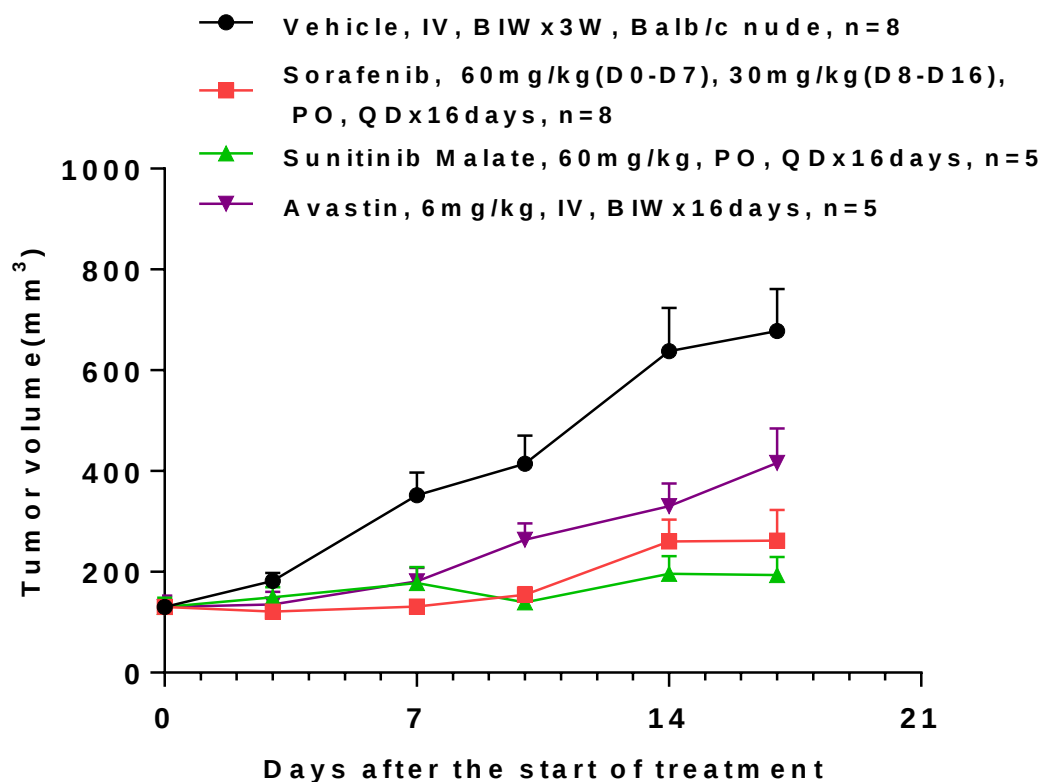
Apatinib in the PC-9 NSCLC Model



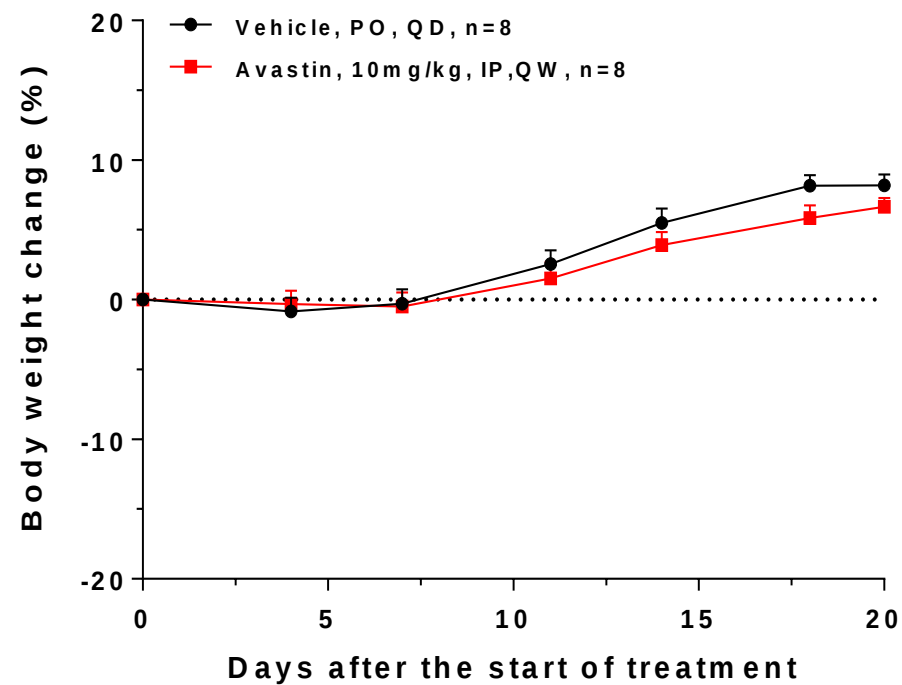
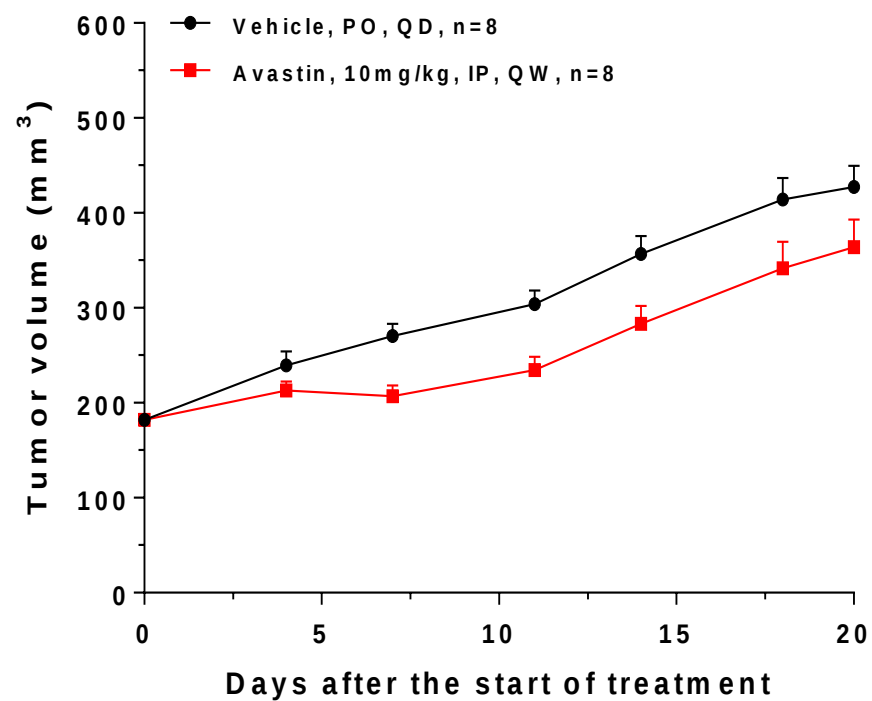
Avastin in NCI-H358 Human NSCLC Xenograft Model



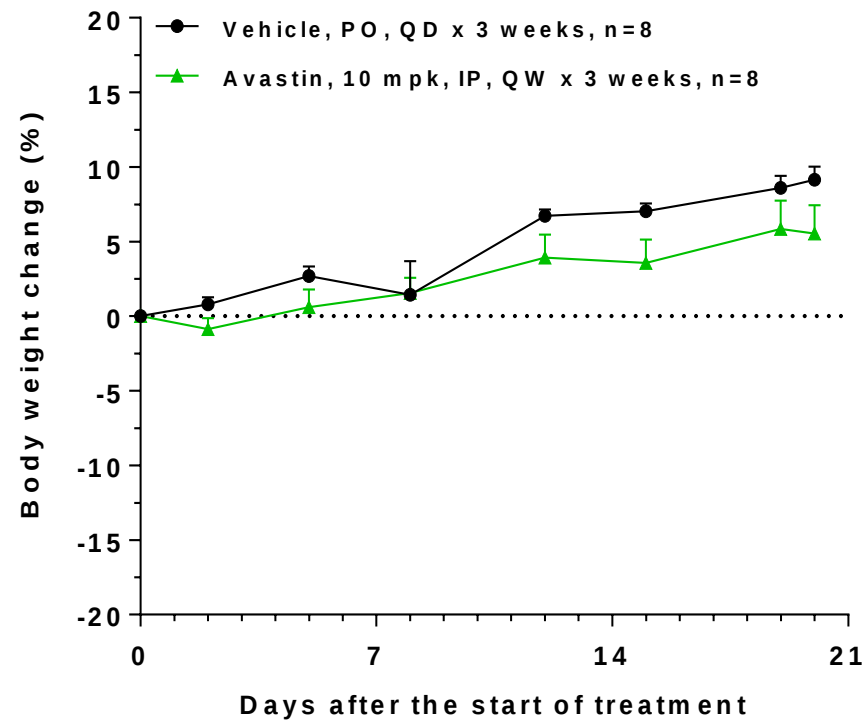
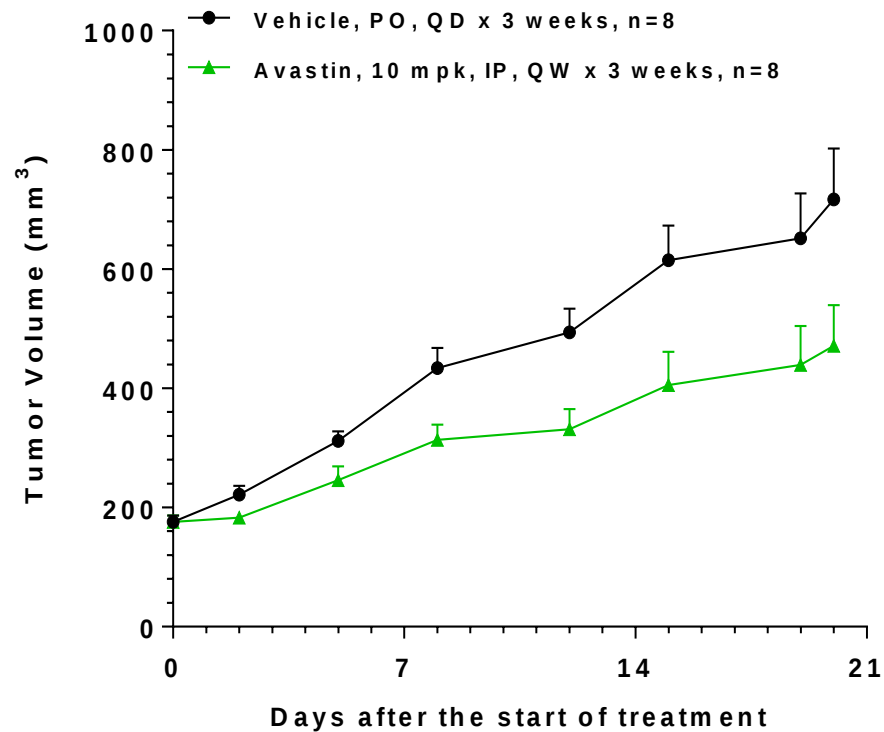
Sorafenib, Sunitinib Malate and Avastin in the 786-O Renal Cancer Model



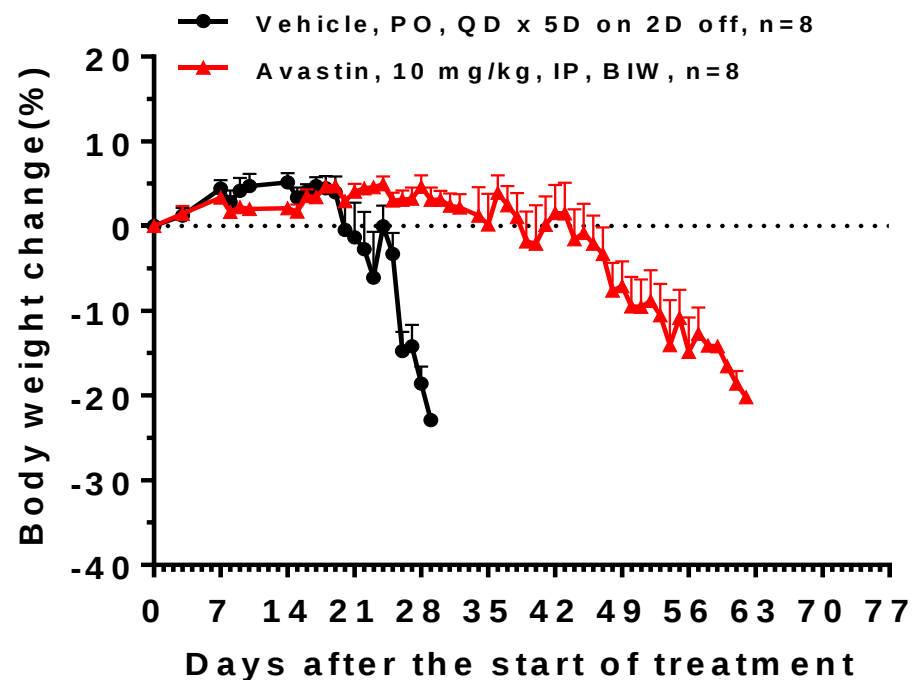
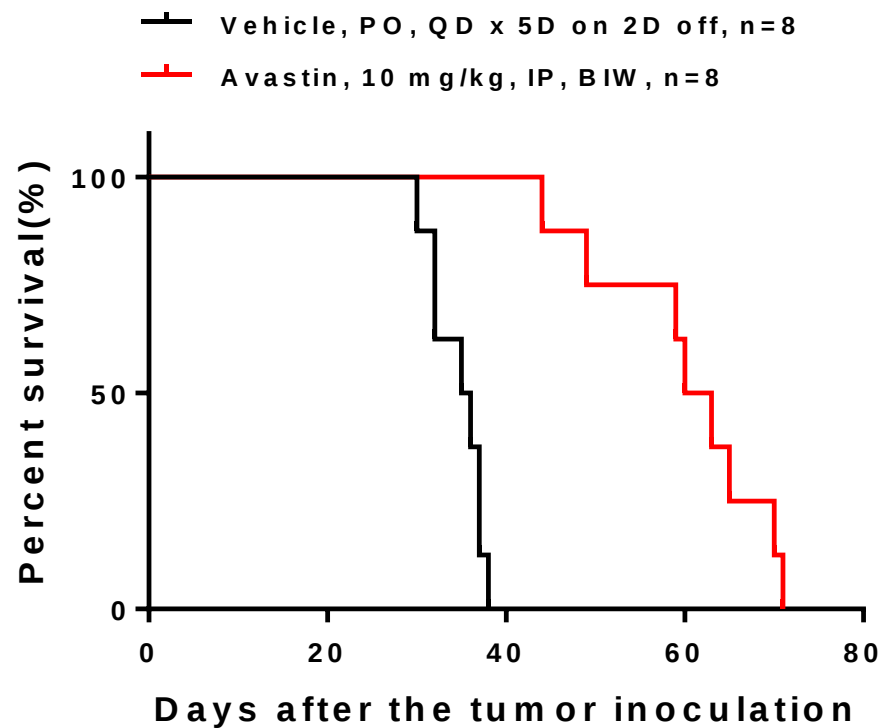
Avastin in the ACHN Human Renal Cancer Model



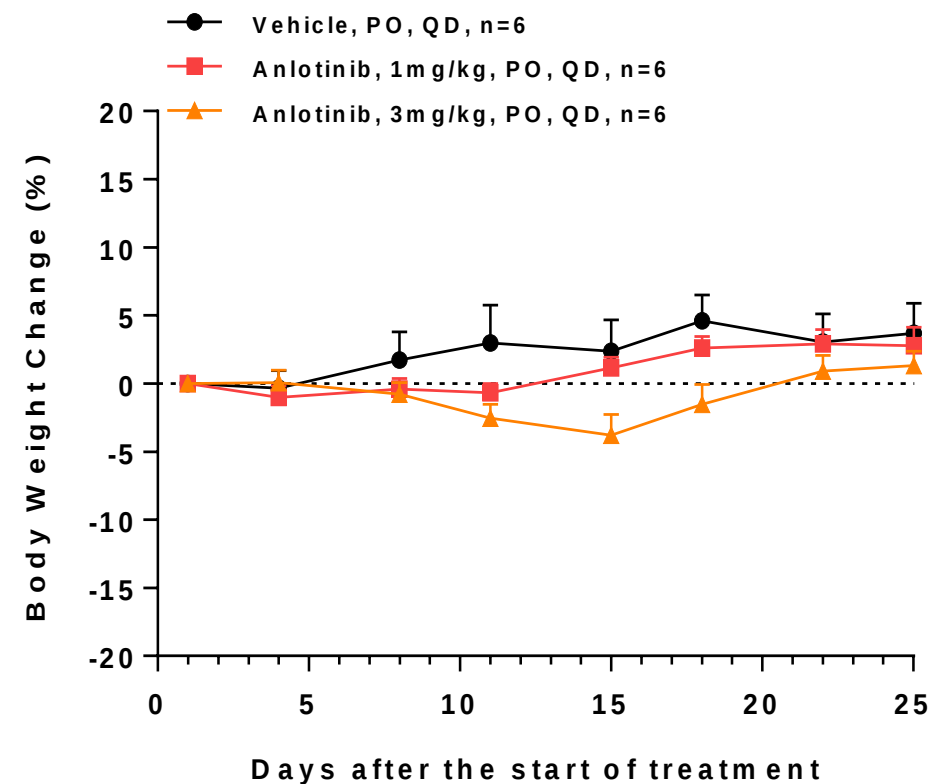
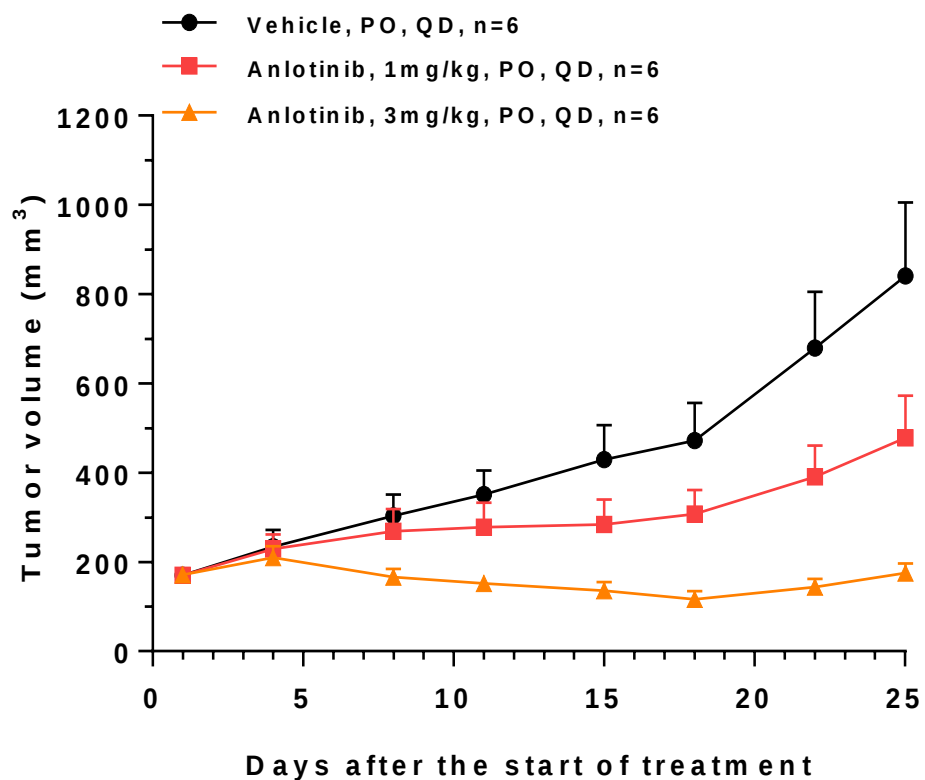
Avastin in the MCF-7 Human Breast Cancer Model



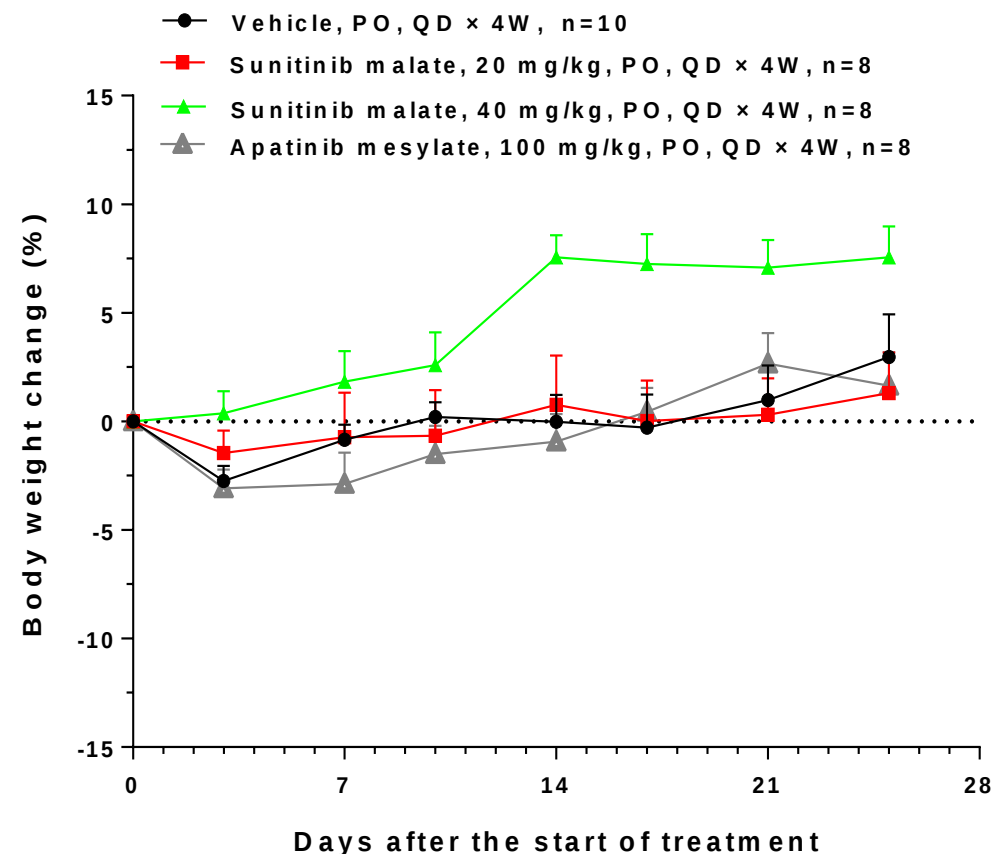
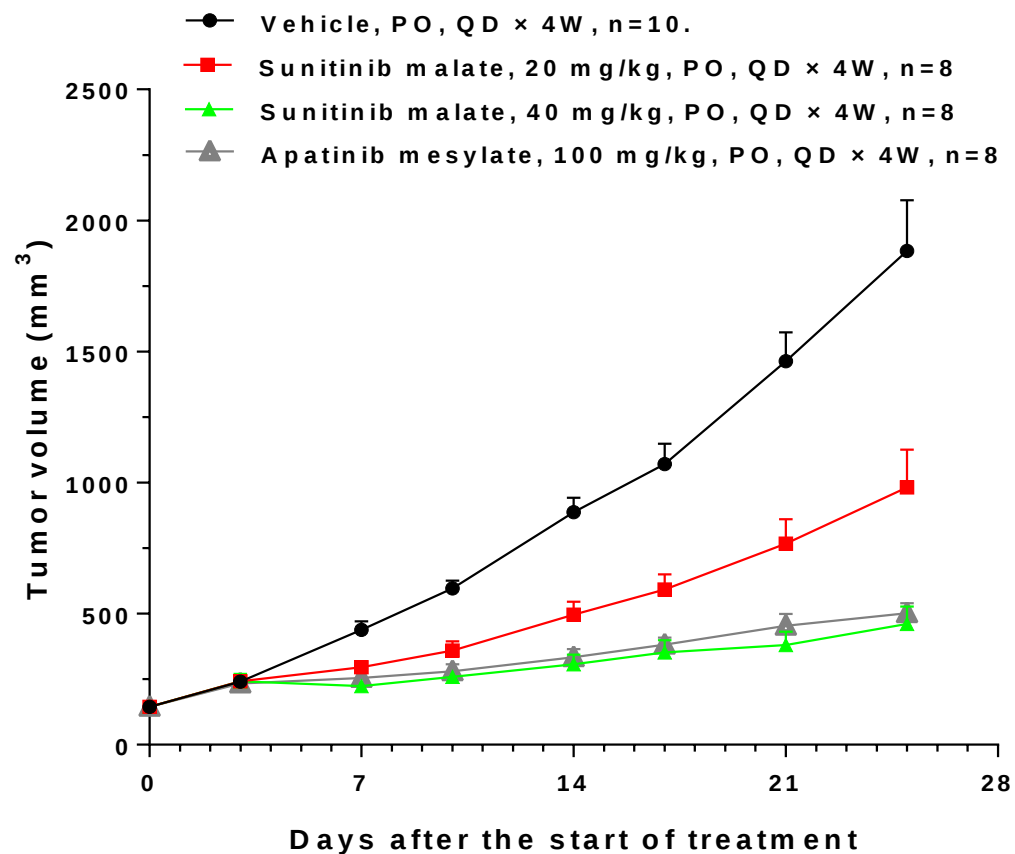
Avastin in the U87 Human GBM Model



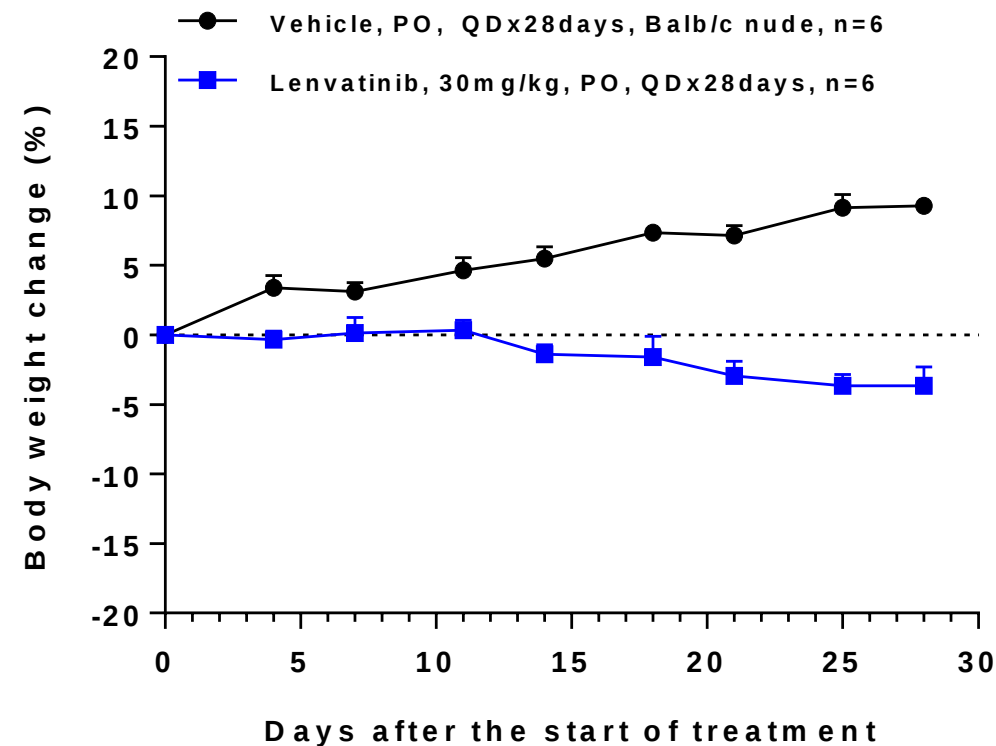
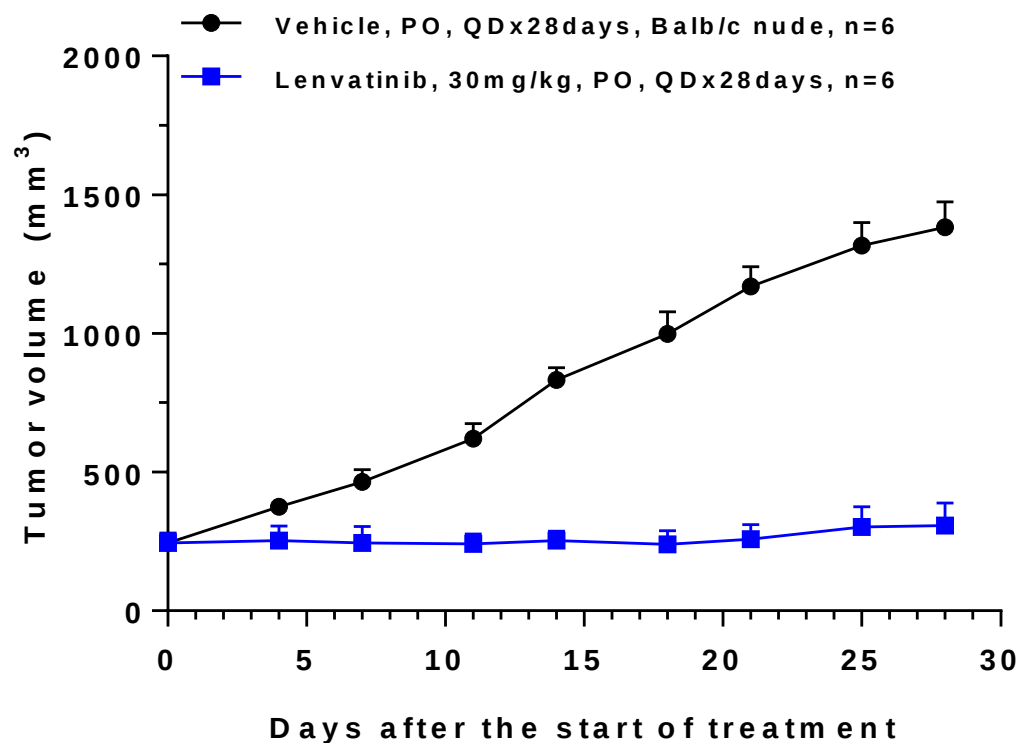
Anlotinib in the NCI-H69 SCLC Model



Sunitinib or Apatinib in MKN-45 Gastric Cancer Xenograft Model



Lenvatinib in FTC-238 Thyroid Cancer Xenograft Model



Summary of Small Molecule Inhibitors in PDX Models

Cancer Type	Model ID	Drugs tested	Dosage	TGI (%)
HCC	LI-03-0004	Lenvatinib	30 mg/kg, QD x 3W	60.9
		Nintedanib	100 mg/kg, QD x 3W	7.4
		Dovitinib	30 mg/kg, QD x 3W	17
		ENMD-2076	100 mg/kg, QD x 3W	47.8
		Sorafenib	60 mg/kg, QD x 3W	54.4
	LI-03-0005	Sorafenib	30 mg/kg, PO, QD x 4W	106.3
		Regorafenib	10 mg/kg, PO, QD x 4W	118.8
	LI-03-0010	Sorafenib	30 mg/kg, QD x 4W	78.1
		Regorafenib	10 mg/kg, PO, QD x 4W	91.2
		Vismodegib	100 mg/kg, QD x 2W	0
		Sorafenib	30 mg/kg, QD x 2W	91
		Sorafenib + Vismodegib	30 mg/kg, QD x 2W + 50 mg/kg, QD x 2W	91
		Lenvatinib	30 mg/kg, QD x 3W	103.7
		Dovitinib	30 mg/kg, QD x 3W	78
		Sorafenib	60 mg/kg, QD x 3W	79.4
	LI-03-0012	Lenvatinib	30 mg/kg, QD x 3W;	97.7
		Sorafenib	60 mg/kg, QD x 3W	95.8
		Foretinib	60 mg/kg, QD x 3W	110
		Cabozantinib	60 mg/kg, QD x 3W	110
		Sorafenib	60/30 mg/kg, QD x 3W	53.2
	LI-03-0016	Vismodegib	50 mg/kg, QD x 27D	0
		Sorafenib	60 mg/kg, QD x 26D	36
		Sorafenib + Vismodegib	60+50 mg/kg, QD x 26D +19D	42
		Lenvatinib	30 mg/kg, QD x 3W + QOD x 2W	116
		Sorafenib	60 mg/kg, PO, QD x 3W + QOD x 2W	103

Summary of Small Molecule Inhibitors in PDX Models

Cancer Type	Model ID	Drugs tested	Dosage	TGI (%)
HCC	LI-03-0018	Sorafenib	60 mg/kg, QD x 3W	62.4
	LI-03-0019	Sorafenib	30 mg/kg, PO, QD x 4W	47.3
		Regorafenib	10 mg/kg, PO, QD x 4W	28.1
	LI-03-0020	Sorafenib	30 mg/kg, QD x 4W	0
		Lenvatinib	30 mg/kg, QD x 3W	99.2
		Nintedanib	100 mg/kg, QD x 3W	57.8
		Dovitinib	30 mg/kg, QD x 3W	80
		ENMD-2076	100 mg/kg, QD x 3W	84.6
		Sorafenib	60 mg/kg, QD x 3W	60.2
	LI-03-0022	Vismodegib	50 mg/kg, QD x 2W	0
		Sorafenib	60 mg/kg, QD x 12D	62
		Sorafenib + Vismodegib	60 mg/kg, QD x 12D + 50 mg/kg, QD x 2W	62
	LI-03-0061	Lenvatinib	30 mg/kg, PO, QD x 3W	84.2
		Nintedanib	100 mg/kg, PO, QD x 3W	77
		Dovitinib	30 mg/kg, PO, QD x 3W	77
		ENMD-2076	100 mg/kg, PO, QD x 3W	64.6
		Sorafenib	60 mg/kg, PO, QD x 3W	46.8
		Sorafenib	30 mg/kg, PO, QD x 4W	77.5
	LI-03-0101	Regorafenib	10 mg/kg, PO, QD x 4W	85.4
		Sorafenib	30 mg/kg, PO, QD x 4W	64.7
		Regorafenib	10 mg/kg, PO, QD x 4W	91.9

Summary of Small Molecule Inhibitors in PDX Models

Cancer Type	Model ID	Drugs tested	Dosage	TGI (%)
HCC	LI-03-0115	Lenvatinib	30 mg/kg, QD x 3W	81.5
		Nintedanib	100 mg/kg, QD x 3W	35.5
		Dovitinib	30 mg/kg, QD x 3W	68
		ENMD-2076	100 mg/kg, QD x 3W	66
		Sorafenib	60 mg/kg, QD x 3W	79.6
	LI-03-0117	Avastin	10 mg/kg, QW	80.1
	LI-03-0141	Sorafenib	30 mg/kg, PO, QD x 4W	79.2
		Regorafenib	10 mg/kg, PO, QD x 4W	100.2
	LI-03-0155	Sorafenib	60 mg/kg, QD x 4W	46.2
	LI-03-0159	Sorafenib	30 mg/kg, PO, QD x 4W	22.6
		Regorafenib	10 mg/kg, PO, QD x 4W	32.3
	LI-03-0164	Lenvatinib	30 mg/kg, PO, QD x 3W	72.8
		Dovitinib	30 mg/kg, PO, QD x 3W	22
		ENMD-2076	100 mg/kg, PO, QD x 3W	0
		Sorafenib	60 mg/kg, PO, QD x 3W	55.9
	LI-03-0189	Sorafenib	30 mg/kg, PO, QD x 4W	67.5
		Regorafenib	10 mg/kg, PO, QD x 4W	72.0
	LI-03-0217	Lenvatinib	30 mg/kg, QD x 3W	84
		Nintedanib	100 mg/kg, QD x 3W	80
		Dovitinib	30 mg/kg, QD x 3W	70
		ENMD-2076	100 mg/kg, QD x 3W	59

Summary of Small Molecule Inhibitors in PDX Models

Cancer Type	Model ID	Drugs tested	Dosage	TGI (%)
HCC	LI-03-0217	Sorafenib	30 mg/kg, PO, QD x 4W	52.3
		Regorafenib	10 mg/kg, PO, QD x 4W	60.2
	LI-03-0191	Sorafenib	30 mg/kg, PO, QD x 4W	128
	LI-03-0254	Lenvatinib	3.75 mg/kg, QD x 25D	87.7
			7.5 mg/kg, QD x 25D	91.9
			15 mg/kg, QD x 25D	94.8
		Sorafenib	25 mg/kg, QD x 25D	91.9
			50 mg/kg, QD x 25D	89.9
	LI-03-0257	Sorafenib	30 mg/kg, PO, QD x 4W	62.8
Cholangiocarcinoma	LI-03-0271	Sorafenib	30 mg/kg, PO, QD x 4W	77.1
	LI-03-0317	Sorafenib	30 mg/kg, PO, QD x 4W	94.8
	LI-03-0332	Sorafenib	3 mg/kg, PO, QD x 3W	92.3
		BLU554	30 mg/kg, PO, QD x 3W	101.9
	CH-17-0001	Cabozantinib	30 mg/kg, PO, QD x 27D	89.9
	CH-17-0003	Cabozantinib	10 mg/kg, PO, QD x 20D	102.1
			30 mg/kg, PO, QD x 20D	111.7
			60 mg/kg, PO, QD x 20D	115.2
	CH-17-0004	Cabozantinib	30 mg/kg, PO, QD x 30D	97.1
	CH-17-0033	Cabozantinib	30 mg/kg, PO, QD x 31D	103.7

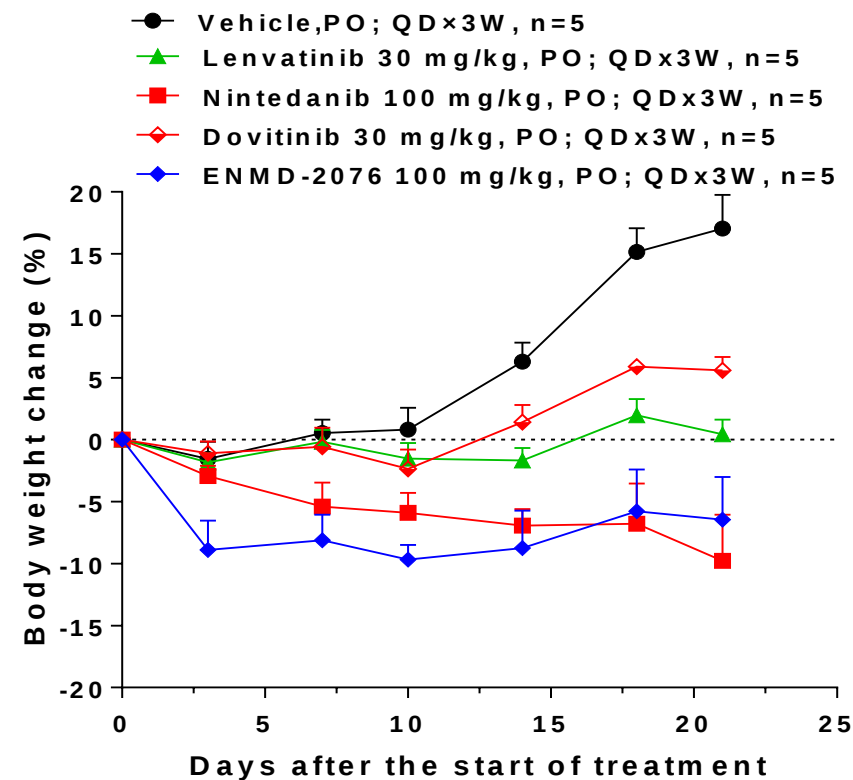
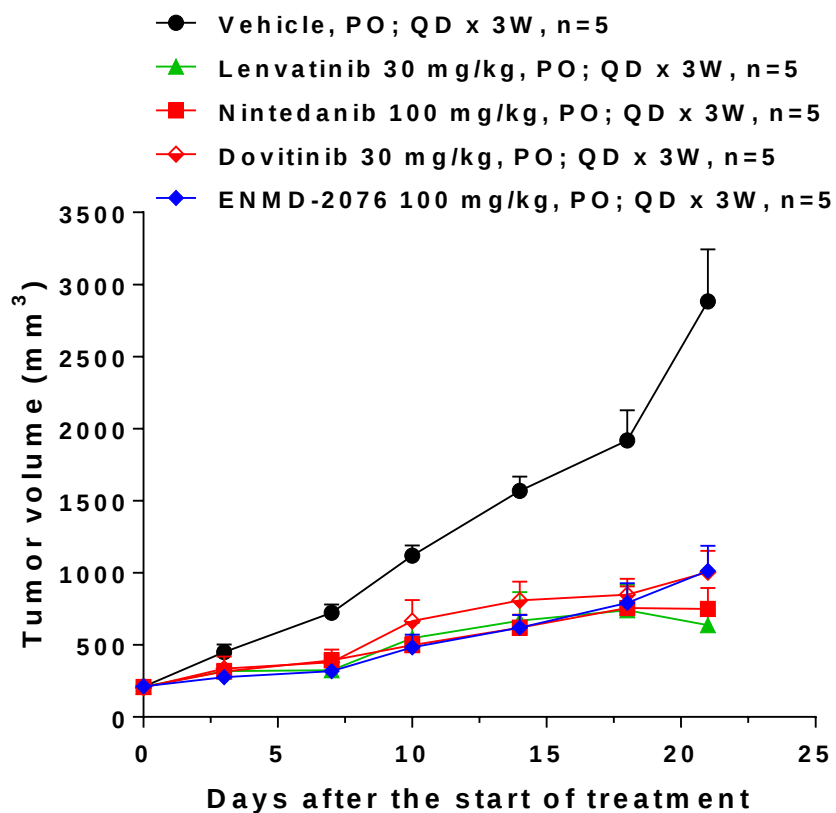
Summary of Small Molecule Inhibitors in PDX Models

Cancer Type	Model ID	Drugs tested	Dosage	TGI (%)
Cholangiocarcinoma	CH-17-0036	Cabozantinib	30 mg/kg, PO, QD x 15D	70.3
	CH-17-0038	Cabozantinib	30 mg/kg, PO, QD x 42D	113
	CH-17-0044	Cabozantinib	10 mg/kg, PO, QD x 21D	88.3
			30 mg/kg, PO, QD x 21D	104.8
			60 mg/kg, PO, QD x 21D	105.8
	CH-17-0073	Cabozantinib	15+30 mg/kg, PO,QD x (0-10)+(11-17) D	66.59
Nasopharyngeal cancer	NP-23-0055	Sorafenib	50 mg/kg, PO, QD x 3W	48.6
		Sorafenib + X ray	50 mg/kg, PO, QD x 3W; 2 Gy, D0,1	82.9
Lung adenocarcinoma	LU-01-0486	Avastin	5 mg/kg, IP, QW	33.9
Gastric cancer	ST-02-0350	Avastin	5 mg/kg, IP, QW	60.1
Colorectal cancer	CO-04-0105	Avastin	5 mg/kg, IP, QWx 3W	28.1
Pancreatic cancer	PC-07-0048	Avastin	5 mg/kg, IP, QW	39.7
Kidney cancer	KI-12-0073	Cabozantinib	30 mg/kg, PO, QD x 3W	33.7
		Pazopanib	30 mg/kg, PO, QD x 3W	24.6

- For model genomic information, VEGFA/B is ubiquitously expressed in all tumor tissue, so usually patient selection is not necessary for VEGF-VEGFR Inhibitors.

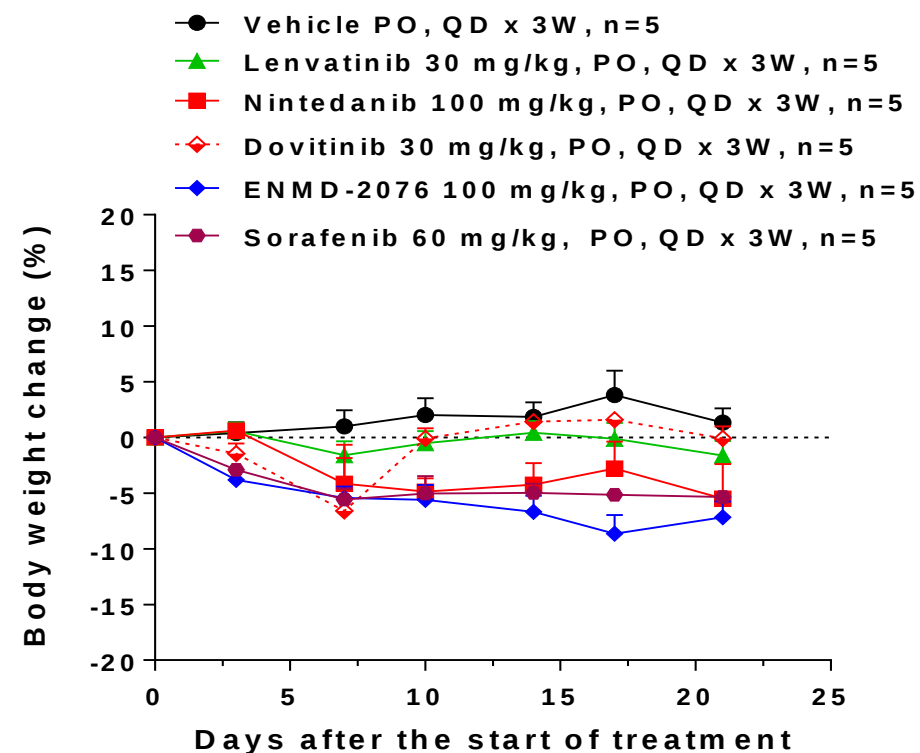
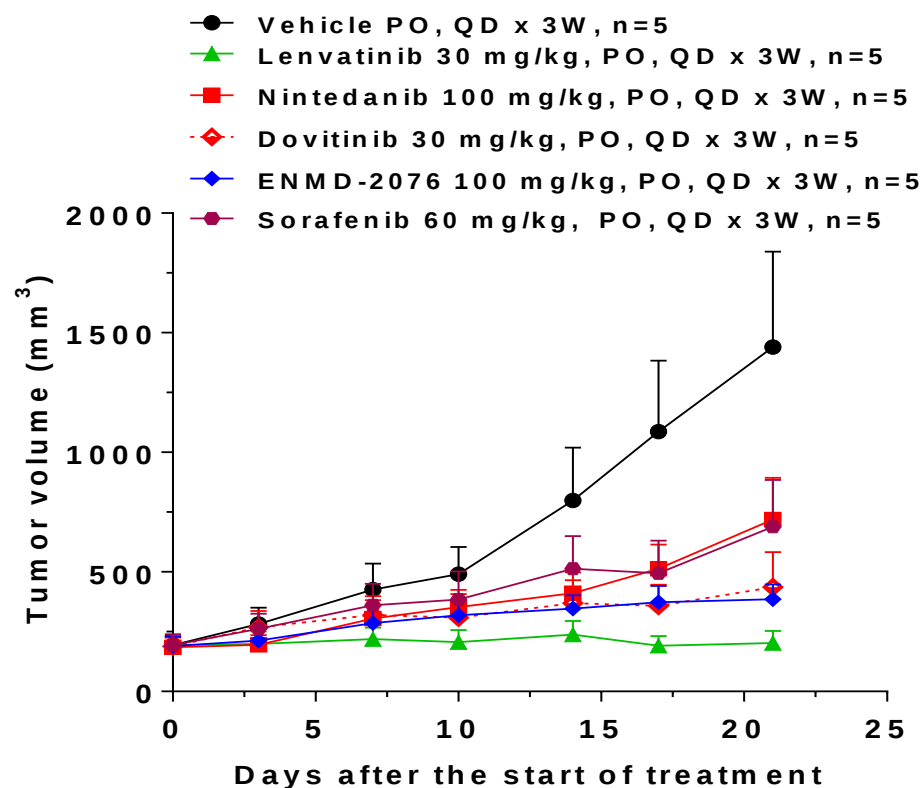
Lenvatinib, Nintedanib, Dovitinib, ENMD-2076 in LI-03-0217

Model ID	Cancer Type	Gender	Age	Tumor Grade	Tumor Stage	Pathological Diagnosis	Molecular Diagnosis
LI-03-0217	Liver cancer	male	56	IV	T3N1M0	NA	IHC: Hep1(+), HBsAg(+), CK18(+), CK19(-), CD46(+), PCEA(+), HBcAg(-), MUC(-)



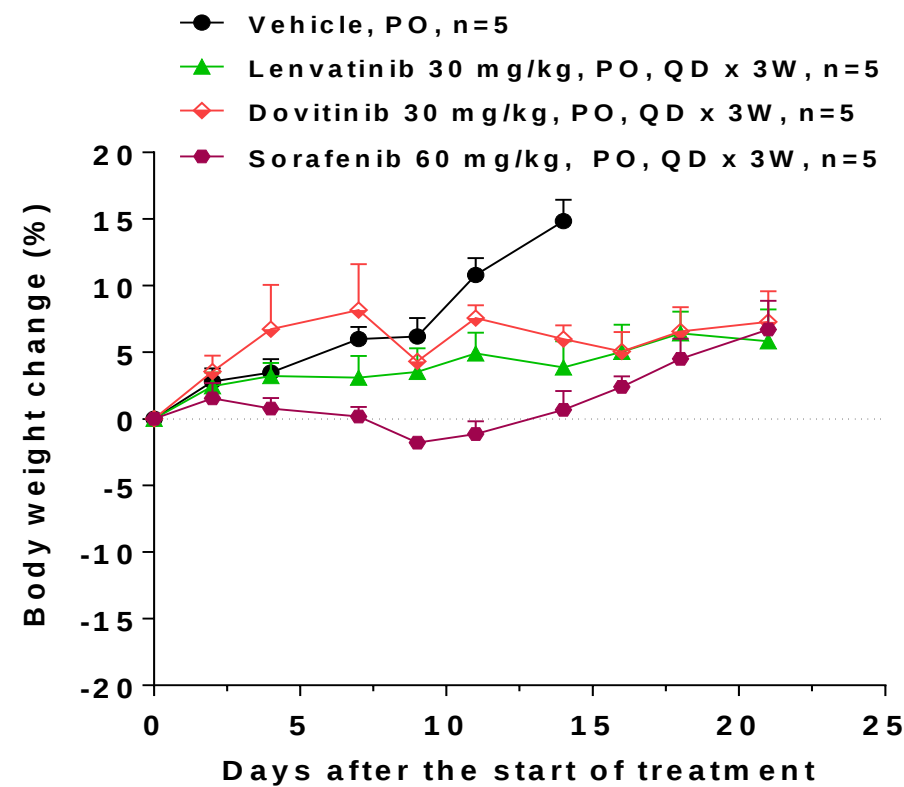
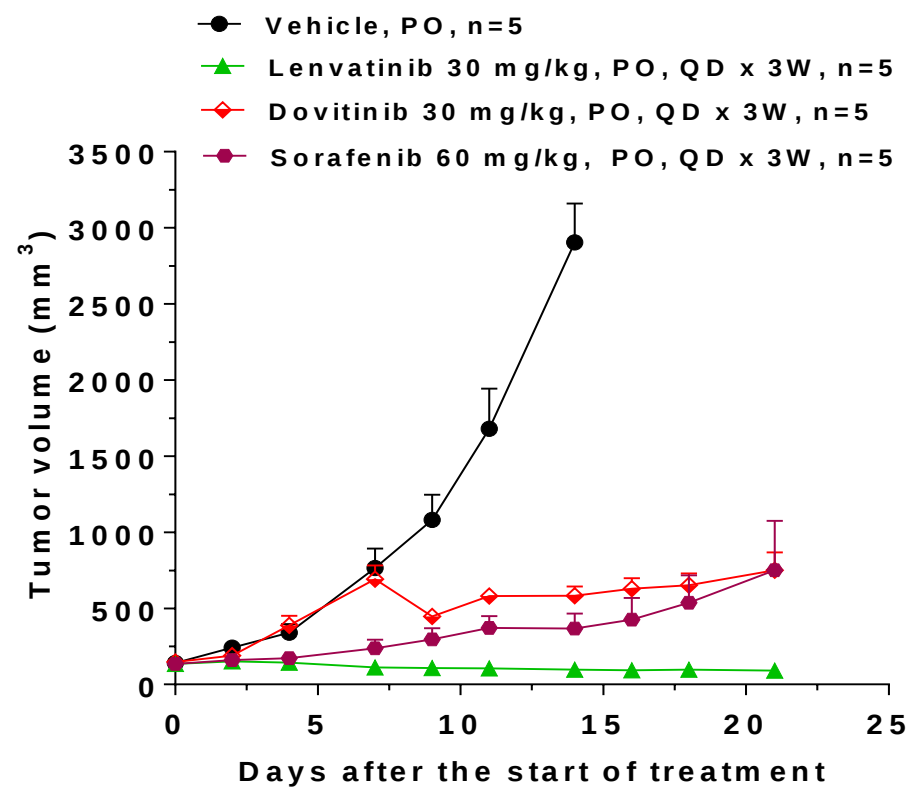
Lenvatinib, Nintedanib, Dovitinib, ENMD-2076, Sorafenib in LI-03-0020

Model ID	Cancer Type	Gender	Age	Tumor Grade	Tumor Stage	Pathological Diagnosis	Molecular Diagnosis
LI-03-0020	Liver cancer	male	69	III	T3N0M0	Thick trabecular type	NA



Lenvatinib, Dovitinib, Sorafenib in LI-03-0010

Model ID	Cancer Type	Gender	Age	Tumor Grade	Tumor Stage	Pathological Diagnosis	Molecular Diagnosis
LI-03-0010	Liver cancer	male	47	NA	NA	NA	IHC: Hep1(-), HBsAg(-), CK18(-), CK19(-), CD34(-), PCEA(-), HBcAg(-), CK20(-), MUC(-)





OUR COMMITMENT

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For questions and requests, please email to info_onco@wuxiapptec.com



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