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## TMA-TNP Design

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1 Works for me



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NCIHTAN

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### ABSTRACT

#### Human Tumor Atlas Tissue MicroArray TNP (TMA-TNP)

The Tissue MicroArray (TMA) TNP will extend the SARDANA-TNP characterization and analytics methodologies for evaluation and validation on a large array of breast tumor samples that provide a broad spectrum of disease state and subtype. A commercially available anonymized breast tumor TMA was purchased and sections distributed to participating HTAN Centers. Some deidentified basic clinical data will also be provided. The participating HTAN Centers will characterize the FFPE specimens (e.g. by imaging) and generate a spatially resolved cell type/state census using each Center's method of choice. Data will then be recorded in a common repository to enable joint analysis.

This TNP has two specific Aims focused on (i) Data Collection and (ii) Data Coordination and Analysis. Individual Centers can participate in one or both aims.

This protocol outlines the design of the TMAs and provides the basic clinical sample descriptions.

### DOI

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### KEYWORDS

tissue microarray, TMA, breast cancer, spatial analysis, data integration, biospecimen, FFPE, spatial mapping, OMS Atlas, HTAN

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- 1 A custom breast TMA design generated by Dr. Koei Chin (OHSU) was sent to Pantomics for TMA FFPE block generation and sectioning. The randomized array design, outlined below, was used to generate 2 identical TMAs, TMA1 and TMA2. Cores from tumor samples with Pantomics Ref. No. were arrayed as shown (the matching HTAN Participant IDs are also shown).

A	B	C
Array Position	Pantomics Ref. No.	HTAN Participant ID
A01	F11-0369	HTA14_1
A02	F08-3884	HTA14_2
A03	F11-0957	HTA14_3
A04	F08-0824	HTA14_4
A05	F18-0992	HTA14_5
A06	255287-OHSU	HTA14_6
A07	F13-1953	HTA14_7
A08	F11-3564	HTA14_8
A09	316473-OHSU	HTA14_9
A10	F10-1047	HTA14_10
A11	MCF10A-KC	HTA14_11
B01	F16-0582	HTA14_12
B02	HCC1143	HTA14_13
B03	F08-1273	HTA14_14
B04	F17-3395A3	HTA14_15
B05	F10-0051	HTA14_16
B06	F10-0992	HTA14_17
B07	F09-1280	HTA14_18
B08	HCC3153	HTA14_19
B09	F16-0582	HTA14_12
B10	F09-0328	HTA14_20
B11	MDAMB436-KC	HTA14_21
C01	F09-3051	HTA14_22
C02	F13-0368	HTA14_23
C03	F10-0572	HTA14_24
C04	F09-1290	HTA14_25
C05	F11-3564	HTA14_8
C06	316473-OHSU	HTA14_9
C07	F09-4287	HTA14_26
C08	F10-0572	HTA14_24
C09	F10-4365	HTA14_27
C10	F08-1426	HTA14_28
C11	HCC1143-KC	HTA14_29
D01	255287-OHSU	HTA14_6
D02	F16-2497	HTA14_30
D03	F09-2873	HTA14_31
D04	F10-0587	HTA14_32
D05	T47D	HTA14_33
D06	F09-0328	HTA14_20
D07	F09-1814	HTA14_34
D08	232527-OHSU	HTA14_35

D09	AU565	HTA14_36
D10	F08-3884	HTA14_2
D11	HCC3153-KC	HTA14_37
E01	F15-0002	HTA14_38
E02	F08-0824	HTA14_4
E03	326007-OHSU	HTA14_39
E04	F18-0992	HTA14_5
E05	F10-1015	HTA14_40
E06	F11-0957	HTA14_3
E07	F08-1273	HTA14_14
E08	F09-3051	HTA14_22
E09	F10-0587	HTA14_32
E10	F08-0773	HTA14_41
E11	AU565-KC	HTA14_42
F01	F10-4365	HTA14_27
F02	F09-4287	HTA14_26
F03	F13-1953	HTA14_7
F04	F09-3432	HTA14_43
F05	F10-0342	HTA14_44
F06	F15-0002A1	HTA14_38
F07	F16-2497	HTA14_30
F08	F10-1047	HTA14_10
F09	F11-1210	HTA14_45
F10	F09-2873	HTA14_31
F11	BT474-KC	HTA14_46
G01	F10-1015	HTA14_40
G02	F09-1814	HTA14_34
G03	F11-1210	HTA14_45
G04	232527-OHSU	HTA14_35
G05	F11-0369	HTA14_1
G06	F08-0773	HTA14_41
G07	F13-0368	HTA14_23
G08	326007-OHSU	HTA14_39
G09	F10-0992	HTA14_17
G10	F09-1290	HTA14_25
G11	T47D-KC	HTA14_47
H01	BT474	HTA14_48
H02	F09-3034	HTA14_49
H03	F09-1280	HTA14_18
H04	F08-1426	HTA14_28
H05	MDAMB436	HTA14_50
H06	F10-0051	HTA14_16
H07	F09-3432	HTA14_43
H08	F09-3034	HTA14_49
H09	F17-3395	HTA14_15
H10	F10-0342	HTA14_44
H11	MCF10A	HTA14_51

## 2

A	B	C	D	E	F	G	H
HTAN Participant ID	Age	Sex	Anat. Site	Pathology	Grade	Clinic stage (TNM)	Subtype
HTA14_25	43	F	Breast	Invasive ductal carcinoma	I	T2N2M0	Luminal A
HTA14_34	55	F	Breast	Invasive ductal carcinoma	II	T2N2M0	Luminal A
HTA14_5	43	F	Breast	Invasive ductal carcinoma	II	T2N0M0	Luminal A
HTA14_10	48	F	Breast	Invasive ductal carcinoma	I	T1N1M0	Luminal A
HTA14_1	56	F	Breast	Invasive ductal carcinoma	II	T2N2M0	Luminal A
HTA14_14	44	F	Breast	Invasive ductal carcinoma	II	T2N1M0	Luminal B Her2+
HTA14_28	37	F	Breast	Invasive ductal carcinoma	II	T4N0M0	Luminal B Her2+
HTA14_26	47	F	Breast	Invasive ductal carcinoma	II	T2N1M0	Luminal B Her2+
HTA14_44	69	F	Breast	Invasive ductal carcinoma	II	T2N0M0	Luminal B Her2+
HTA14_32	49	F	Breast	Invasive ductal carcinoma	II	T2N0M0	Luminal B Her2+
HTA14_41	37	F	Breast	Invasive ductal carcinoma	III	T1N0M0	Luminal B HER-
HTA14_4	43	F	Breast	Invasive ductal carcinoma	II	T1N0M0	Luminal B HER-
HTA14_24	59	F	Breast	Invasive lobular carcinoma	II	T2N0M0	Luminal B HER-
HTA14_17	43	F	Breast	Invasive ductal carcinoma	II	T2N0M0	Luminal B HER-
HTA14_40	69	F	Breast	Invasive ductal carcinoma	II	T2N1M0	Luminal B HER-
HTA14_20	65	F	Breast	Invasive ductal carcinoma	II	T2N0M0	Her2 over-expression
HTA14_18	42	F	Breast	Invasive ductal carcinoma	III	T2N0M0	Her2 over-expression
HTA14_31	52	F	Breast	Invasive ductal carcinoma	I	T2N2M0	Her2 over-expression
HTA14_22	50	F	Breast	Invasive ductal carcinoma	II	T2N0M0	Her2 over-expression
HTA14_43	40	F	Breast	Invasive ductal carcinoma	III	T2N0M0	Her2 over-expression
HTA14_27	32	F	Breast	Invasive ductal carcinoma	III	T3N0M0	TNBC
HTA14_3	76	F	Breast	Invasive ductal carcinoma	II	T2N0M0	TNBC
HTA14_45	51	F	Breast	Invasive ductal carcinoma	III	T2N0M0	TNBC

HTA14_8	39	F	Breast	Invasive ductal carcinoma	II	T2N0M0	TNBC
HTA14_23	30	F	Breast	Invasive ductal carcinoma	III	T3N2M0	TNBC
HTA14_49	67	F	Breast	Invasive lobular carcinoma	II	T3N1M0	Invasive lobular carcinoma
HTA14_16	55	F	Breast	Invasive lobular carcinoma	II	T4N3M0	Invasive lobular carcinoma
HTA14_7	42	F	Breast	Invasive lobular carcinoma	II	T2N3M0	Invasive lobular carcinoma
HTA14_12	38	F	Breast	Invasive lobular carcinoma	II	T2N0M0	Invasive lobular carcinoma
HTA14_30	49	F	Breast	Invasive lobular carcinoma	I	T3N2M0	Invasive lobular carcinoma
HTA14_38	5	M	Tonsil	Normal Tonsil			Normal Tonsil
HTA14_15	68	M	Jejunum	Normal Jejunum			Normal Jejunum
HTA14_13			Breast cell line	HCC1143			Basal Like
HTA14_19			Breast cell line	HCC3153			Basal Like
HTA14_33			Breast cell line	T47D			Luminal A
HTA14_48			Breast cell line	BT474			Luminal B
HTA14_36			Breast cell line	AU565			Her2 over-expression
HTA14_50			Breast cell line	MDAMB436			Claudin Low
HTA14_51			Breast cell line	MCF10A			Cystic fibrosis
HTA14_2	43	F	Normal Breast	Normal Breast to IDC			NB-1A
HTA14_35			Normal Breast	Normal Adacent Tissue			NB-2A
HTA14_6			Normal Breast	Normal Adacent Tissue			NB-3A
HTA14_39			Normal Breast	True Normal			NB-4A
HTA14_9			Normal Breast	True Normal			NB-5B
HTA14_47			Breast cell line	HCC1143			Luminal A
HTA14_46			Breast cell line	HCC3153			Luminal B
HTA14_42			Breast cell line	T47D			HER2

HTA14_37			Breast cell line	BT474			Basal Like
HTA14_29			Breast cell line	AU565			Basal Like
HTA14_21			Breast cell line	MDAMB436			Claudin Low
HTA14_11			Breast cell line	MCF10A			Cystic fibrosis